

Independent Environmental Audit (IEA) Clarence Colliery



For Centennial Clarence Pty Limited



Clarence Colliery Road, Off Bells Line of Road Clarence NSW

MCW Environmental

July 2016

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Table of Contents

Executive Summary	ES-1
1 Introduction	3
1.1 Background.....	3
1.2 Audit scope	3
1.2.1 Audit methodology	4
1.3 Documents reviewed.....	5
1.4 Personnel and timing	5
1.5 Sensitive information	6
1.6 Format of report.....	6
2 Clarence Colliery Operations.....	7
2.1 Site description and history.....	7
2.2 Development Consents and Licences	7
2.3 Description of site operations	10
2.4 Activities occurring during audit site inspection.....	10
3 Compliance with Statutory Requirements.....	12
3.1 Key statutory approvals.....	12
3.2 Performance categories.....	13
3.3 Compliance Management.....	14
3.4 Close out of recommended actions from previous IEA	14
4 Environmental Performance	15
4.1 Incident Management	15
4.1.1 Reported Incidents.....	17
4.1.2 Minor incidents.....	18
4.2 Complaint Management	18
5 July 2015 Incident	20
5.1 Summary of incident	20
5.2 Actions taken following the incident to minimise further impact.....	20
5.3 Regulatory Response.....	21
5.3.1 EPA	21
5.3.2 DRE	22
5.3.3 Trade & Investment Mine Safety.....	23
5.4 Observations during audit site inspection	23
6 Site Inspection Observations.....	26
7 Review of Environmental Management System	37
7.1 Environmental Management Overview	37
7.1.1 Centennial Coal Policy and Framework.....	37
7.1.2 Clarence Colliery Environmental Management.....	38
7.2 Environmental Management Strategy.....	38
7.3 Environmental Monitoring Program.....	39
8 Subsidence Management	42
8.1 Background.....	42

8.2	Compliance with SMP Approvals	43
8.3	Plan Development.....	43
8.3.1	Partial Extraction Layout Design and Subsidence Prediction	43
8.3.2	Trigger Action Response Plans	44
8.3.3	Subsidence Monitoring (Surface Monitoring)	45
8.3.4	Underground Monitoring	45
8.3.5	End of Year Reports	46
8.3.6	Subsidence Reviews	46
8.3.7	Public Safety Management Plans	46
8.3.8	Environmental Monitoring Program	46
9	Audit of Subsidence, Groundwater and Surface Water Impacts	47
9.1	Introduction.....	47
9.2	Subsidence.....	47
9.2.1	Impact Assessment Criteria	47
9.2.2	Subsidence Data Review, Trend Identification	48
9.2.3	Subsidence Impacts	52
9.3	Groundwater	52
9.3.1	Impact Assessment Criteria	52
9.3.2	Background and Changes since 2010 IEA	52
9.3.3	Groundwater Monitoring Locations	53
9.3.4	Impacts to Groundwater Monitoring Equipment.....	54
9.3.5	Data Review and Trend Identification	55
9.3.6	Subsidence Impacts on Groundwater	57
9.4	Subsidence Impacts on Surface Water.....	57
9.5	Conclusions	58
10	Summary of Non Compliances and Recommendations	59
10.1	Additional Opportunities for Improvements.....	73
11	Limitations of Report	76

Appendices

Appendix A Compliance Tables – Development Consent; Environmental Protection Licence Consolidated Coal Lease and Mining Lease Commitments

Appendix B Close out of previous IEA (URS, 2011) actions

Appendix C DPE Approval of Independent Audit Team

Tables

Table ES-1 Overall Compliance Assessment and Audit Score

Table 1-1 Scope of Work.....	3
Table 3-1 List of Approvals, Licences and Leases.....	12
Table 3-2 Performance Category.....	13
Table 4-1 Summary of Incidents Recorded by Category for the Period 2011 - 2015	17
Table 4-2 Number and nature of Category 4 (minor) incidents for the audit period 2011-2015	18
Table 5-1 EPA Clean-Up Actions and summary of status during audit site inspection	21
Table 5-2 Observations of the July 2015 incident area during the audit site inspection on 12 and 13 January 2016	23
Table 6-1 Site Inspection Photographs – Pit Top Area.....	26
Table 6-2 Site Inspection Photographs – Reject Emplacement Areas	31
Table 6-3 Site Inspection Photographs – Rehabilitation of boreholes and Subsidence Monitoring ..	35
Table 10-1 Non-Compliant and Not Verified Conditions.....	60
Table 10-2 Summary of Opportunities for Improvement	73

Figures

Figure 2-1 Location of Clarence Colliery, NSW	9
Figure 4-1 Categories of Environmental Incidents.....	16

Abbreviations

Abbreviation	Description
AQMP	Air Quality Management Plan
AEMR	Annual Environmental Management Report
BCA	Building Code of Australia
CCC	Community Consultative Committee
CoC	Condition of Consent
Council	Lithgow City Council
CHPP	Coal Handling and Preparation Plant
DA	Development Application
Department	Department of Planning
Director-General	Director-General of Department of Planning, or delegate
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
DPI Water	Department of Primary Industries Water (formerly NSW Office of Water)
DRE	Division of Resources and Energy within the Department of Industry
DWE	Department of Water and Energy
EIS	Environmental Impact Statement
EC	Electrical Conductivity
EEC	Endangered Ecological Community as defined under the NSW Threatened Species Conservation Act 1995
Environmental consequences	Environmental consequences of Subsidence Impacts, including: damage to infrastructure, buildings and residential dwellings; loss of surface flows to the subsurface; loss of standing pools; adverse water quality impacts; development of iron bacterial mats; cliff falls; rock falls; damage to Aboriginal heritage sites; impacts on aquatic ecology, ponding etc.
EMP	Environmental Management Plan
EMS	Environmental Management System
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
IEA	Independent Environmental Audit
INP	Industrial Noise Policy
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
LCC	Lithgow City Council
Mine Water	Water that accumulates within active mining areas, coal rejects emplacement areas, tailings dams and infrastructure areas, synonymous with dirty water
Mining Operations	Includes all coal extraction, processing, and transportation activities carried out on site
Minister	Minister for Planning, or delegate
Mtpa	Million tonnes per annum
NMP	Noise Monitoring Program
Privately owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary).
Project	The development as described in the EA
Proponent	Centennial Coal Company
REF	Review of Environmental Factors
ROM	Run of Mine
RTA	Roads and Traffic Authority
SEE	Statement of Environmental Effects
Site	Lands described in Schedule 1 of the Development Consents of DA 504-00
SOC	Statement of Commitments

Abbreviation	Description
Subsidence or Subsidence effects	Deformation of the ground mass due to mining, being all mining induced ground movements, including both vertical and horizontal displacement, tilt, strain and curvature
Subsidence impacts	Physical changes to the ground and its surface caused by Subsidence Effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface disturbance or troughs
SMP	Subsidence Management Plan
TARP	Trigger Action Response Plan
TSS	Total Suspended Solids

Executive Summary

MCW Environmental Pty Ltd (MCW Environmental) was engaged by Clarence Colliery Pty Ltd (Clarence) to carry out an Independent Environmental Audit (IEA) of the Clarence Colliery located at in the Blue Mountains near the village of Clarence, New South Wales (NSW).

Schedule 5, Condition 6 of the Clarence Development Consent (DA 504-00) dated December 2005 requires Clarence to commission an IEA within 5 years of the date of consent and every five years thereafter. This is the second IEA to be carried out at the Clarence Colliery. The previous audit was conducted by URS Australia Pty Ltd in January 2011 and covered the audit period from 19 December 2005 to 31 December 2010.

The audit period has been defined as from the 1 January 2011 (the end date of the previous audit period was 31 December 2010) to 12 January 2016 (date of first site visit conducted as part of this audit).

The audit was completed in accordance with Schedule 5, Condition 6 of DA 504-00 and the MCW Environmental proposal to conduct the work dated 6 December 2015. The audit methodology comprised the following activities:

- Initial discussions with Clarence to organise the audit, including the provision of documentation, the site visit and timing;
- Discussions with NSW Department of Planning and Environment (DP&E) to discuss any concerns and areas for particular focus during the audit;
- Review of site compliance checklists and other documentation provided by Clarence;
- A three-day site inspection and interviews with key site personnel, on 12 and 13 January 2016 and the 7 March 2016;
- Consultation with key government agencies as presented in this report;
- Review of additional documentation provided by Clarence after the site inspection;
- Submission of a Draft Report to Clarence outlining the audit findings; and
- Finalisation of the report based on comments from Clarence.

The IEA assessed compliance with relevant approvals, licences and management plans applicable to Clarence. Detailed compliance registers identifying audit findings, comments and recommendations are presented in **Appendix A**. Non-compliances identified against relevant approvals are identified and discussed in Section 10. Clarence's overall compliance status is summarised in **Table ES-1**.

Table ES-1 Overall Compliance Assessment and Audit Score

Relevant Approval	Percent Compliant (%)	Number of Conditions Non-compliant or Not verified
Development Consent Clarence Colliery Mine DA 504-00	77	15
DA 504-00 Appendix 3 Statement of Commitments	33	6
1976 Development Consent Clarence Colliery Mine	86	1
1993 Development Consent Clarence Colliery Mine	90	1
1994 Development Consent Clarence Colliery Mine	67	4
Environmental Protection Licence No. 726	79	12
Mining Lease 1583	100	0
Consolidated Coal Lease 705	87	4
Subsidence Management Plan (SMP) Approval 800 Area	95	1
Subsidence Management Plan (SMP) Approval 900 Area	100	0

It is noted that in determining the overall audit score, where a condition has multiple parts, if one part has been assessed as non-compliant or not verified then the whole condition has been counted as non-compliant or not verified. Conditions assessed as completed, not triggered or not assessed have been counted as compliant in determining the percent compliant. The full assessment provided in **Appendix A** presents the assessment of compliance for each part for those conditions with multiple parts.

In addition the scope of the audit included a review of the adequacy of the Environmental Management Strategy and Environmental Monitoring Program.

A summary of recommended actions to improve environmental performance and compliance status are presented in Section 10.

1 Introduction

1.1 Background

MCW Environmental Pty Ltd (MCW Environmental) was engaged by Clarence Colliery Pty Ltd to carry out an Independent Environmental Audit (IEA) of the Clarence Colliery (Clarence) located in the Blue Mountains near the village of Clarence, New South Wales (NSW). Clarence Colliery Pty Ltd is the operator of Clarence Colliery and is a wholly owned subsidiary of Centennial Coal Company Limited.

Schedule 5, Condition 6 of the Clarence Development Consent (DA 504-00) dated December 2005 requires Clarence to commission an IEA within 5 years of the date of consent and every five years thereafter. This is the second IEA to be carried out at the Clarence Colliery. The previous audit was conducted by URS Australia Pty Ltd in January 2011 and covered the audit period from 19 December 2005 to 31 December 2010.

The audit period has been defined as from the 1 January 2011 (date of last audit conducted) to 13 January 2016 (date of first site visit conducted as part of this audit).

The audit was completed in accordance with Schedule 5, Condition 6 of DA 504-00 and the MCW Environmental proposal to conduct the work dated 6 December 2015.

The audit team was approved by DP&E in a letter dated 19 November 2015.

This report presents the findings of this audit.

1.2 Audit scope

The audit was conducted in accordance with the requirements set out in the Development Consent of DA 504-00, Schedule 5, Condition numbers 6 and 7 as detailed in Table 1-1.

Table 1-1 Scope of Work

Condition	Requirement	Where Addressed in this Report
6	<i>Within 5 years of the date of this consent, and every 5 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:</i>	This Report
(a)	<i>be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Secretary;</i>	Appendix C
(b)	<i>be consistent with ISO 19011:2002 – Guidelines for Quality and/or Environmental Systems Auditing, or updated versions of this guideline;</i>	Section 1.2.1
(c)	<i>assess the environmental performance of the development, and its effects on the surrounding environment;</i>	Section 4 & Appendix A
(d)	<i>assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;</i>	Section 10 & Appendix A
(e)	<i>review the adequacy of the Applicant's Environmental Management Strategy and Environmental Monitoring Program; and, if necessary,</i>	Section 7
(f)	<i>recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.</i>	Section 10

Condition	Requirement	Where Addressed in this Report
7	<i>The Independent Environmental Audit shall include a detailed audit of the subsidence, surface water, and ground water impacts of the development. The audit shall:</i>	
(a)	<i>review the monitoring data for the development;</i>	9.2.2
(b)	<i>identify any trends in the monitoring data;</i>	9.2.2; 9.3.5; 9.4.
(c)	<i>examine the subsidence, surface water, and ground water impacts of the development;</i>	9.2.3; 9.3.6; 9.4
(d)	<i>compare these impacts against the relevant impact assessment criteria; and, if necessary,</i>	9.2.2; 9.3.5; 9.4.
(e)	<i>recommend measures to reduce, mitigate, or remediate these impacts</i>	9.2.2; 9.3.5; 9.4.
	<i>If the independent audit determines that the subsidence, surface water, and/or ground water impacts resulting from the underground mining operations are greater than those predicted in the EIS/Supplementary Report or the relevant impact assessment criteria, the Applicant shall:</i>	-
(a)	<i>assess the significance of these impacts;</i>	-
(b)	<i>investigate measures to minimise these impacts, including modifying subsequent mine plans; and</i>	-
(c)	<i>describe what measures would be implemented to reduce, minimise, mitigate or remediate these impacts in the future;</i>	-
(d)	<i>to the satisfaction of the Secretary</i>	-

1.2.1 Audit methodology

The purpose of this IEA was to assess compliance with the Conditions of the Development Consent (CoC), licences and approvals that apply to the project and review the adequacy of the Environmental Management Strategy and Environmental Monitoring Program required under the Development Consent. It was undertaken in accordance with MCW Environmental's Proposal (dated 6 December 2015).

Compliance checklists were developed by MCW Environmental that included a list of conditions and commitments to be assessed for compliance, including Development Consent (DA 504-00), 1976 Development Consent, 1993 Modified Development Consent, Environment Protection Licence (EPL) No. 726, Consolidated Coal Lease (CCL) No. 705 and Mining Lease (ML) No. 1583, Subsidence Management Plan (SMP) 900 Area Approval and SMP 800 Area Approval.

The auditors assessed compliance by viewing evidence of documents associated with each aspect of the various approvals and associated plans, programs and strategies.

The Audit was carried out in accordance with ISO 19011:2003 Guidelines for quality and/or environmental management systems auditing.

The audit methodology comprised the following activities:

- Initial discussions with Clarence to organise the audit, including the provision of documentation, the site visit and timing;
- Review of site compliance checklists and other documentation provided by Clarence;

- A three-day site inspection and interviews with key site personnel, on 12 and 13 January 2016 and the 7 March 2016; Tasks undertaken during the audit site inspection included:
 - Opening meeting;
 - Site inspections with the Clarence Colliery Environmental Coordinator and others;
 - Review of relevant documentation provided by the Clarence Colliery Environmental Coordinator;
 - Interviews with key personnel including the Environmental Coordinator; Mine Manager; Production Manager; Manager – Mechanical Engineering and Contractor involved in Subsidence Monitoring;
 - Close out meeting.
- Review of additional documentation provided by Clarence after the site inspection;
- Submission of a Draft Report to Clarence outlining the audit findings; and
- Finalisation of the report based on comments from Clarence.

This report provides a summary of findings including details of non-compliances identified in the audit, an audit score (percentage compliant), and recommended actions to improve compliance status.

1.3 Documents reviewed

The following information was reviewed during the audit process:

- Regulatory approvals as listed in Table 3-1
- Management Plans as listed in Section 7.1.2;
- Environmental Protection Licence (EPL) No. 726;
- Site environmental procedures and checklists;
- Selected correspondence with relevant government agencies and stakeholders (as provided and as relevant to the audit);
- Selected records of competency, induction and training;
- Selected meeting minutes;
- Selected reports; and
- Evidence of monitoring and review.

Documents used as part of the audit are referenced as part of the text discussing compliance status in **Appendix A**.

1.4 Personnel and timing

In accordance with Condition of Schedule 5 of the Consent, the audit was to be conducted by a suitably qualified, experienced and independent person whose appointment has been endorsed by the Secretary. The audit team comprised of the following personnel, as approved by the DP&E by letter dated 19 November 2015.

- Michael Woolley, Lead Auditor (MCW Environmental); and
- Helen Onus, Auditor (AECOM Australia Pty Ltd).

The DP&E letter also approved the audit team to carry out the detailed audit of the subsidence, surface water and groundwater impacts required by Condition 7 of Schedule 5 of the Consent.

Michael Woolley is registered by Exemplar Global as a Certified Lead Auditor for Environmental Management, Site Contamination Assessment and Compliance Auditing. Helen Onus is registered as an Auditor by Exemplar Global. The site visit for the audit was conducted on 12, 13 January and 7 March 2016.

Personnel interviewed during the site visit included the following:

- Martin Howe, Clarence Colliery Environment and Community Coordinator
- Edwina White, Technical Services Manager

1.5 Sensitive information

It is understood that information collected during the audit may be sensitive. All documents used during the audit to verify compliance were kept secure and not distributed outside the relevant personnel involved in the audit.

1.6 Format of report

The format of this report is as follows:

- Section 1 is introductory and defines the scope and nature of the audit.
- Section 2 describes Clarence's operations as observed during the site inspection.
- Section 3 describes the approach to the assessment against the relevant standard, performance measures and statutory requirements.
- Section 4 provides an assessment of the environmental performance of the development and its effects on the surrounding environment.
- Section 5 discusses the July 2015 incident
- Section 6 provides a summary of site observations made during the site visit.
- Section 7 presents the findings of the review of the adequacy of the Environmental Management Strategy and Environmental Monitoring Program.
- Section 8 provides an overview of Clarence Colliery's approach to subsidence management and reviews the adequacy of subsidence management.
- Section 9 provides an audit of subsidence, groundwater and surface water impacts.
- Section 10 summarises the non-compliances and recommendations made throughout the report.

Appendix A is a tabulated review of the results of the assessment against the CoC, EPL conditions, ML conditions, CCL conditions, and Subsidence Management Plan approval conditions.

Appendix B assesses the close out of the findings of the previous 2012 IEA.

Appendix C is a copy of the DPE approval of the audit team.

2 Clarence Colliery Operations

2.1 Site description and history

Clarence Colliery is located on the eastern extremity of the Western Coal Field, off Bells Line of Road approximately 10 km east of Lithgow, NSW. Clarence Colliery's Coal Lease abuts the Blue Mountains National Park boundary to the east, Newnes State Forest to the north and State land to the west. It is situated on the Newnes Plateau near the catchment divide between the Wollangambe River and Farmers Creek/Coxs River system.

The Colliery extracts coal from the Katoomba Coal Seam and first commenced operations in 1979, initially operating as a bord and pillar mine and then switching to longwall mining in 1993. Centennial Coal purchased the facility in 1998 and reintroduced bord and pillar mining techniques using partial extraction to minimise surface subsidence and aquifer impacts, whilst maximising resource recovery and mine productivity.

2.2 Development Consents and Licences

Mining at Clarence is undertaken within CCL 705, ML 1353, ML 1354 and ML 1584 and in accordance with EPL 726.

The site is operating under a number of development approvals, the most recent of which is Development Consent DA 504-00 granted in 2005 for the conversion of exploration tenements into mining leases for expansion to the east and west. Approval to commence mining was originally granted in 1976 by the Blaxland Shire Council, now known as Lithgow City Council (LCC).

The approval area partially encompassed CCL 705. A variation to this approval was granted by the Greater Lithgow County Council, now known as LCC in 1993. The approval amended the reject emplacement facilities and expanded the mining area to include all of CCL 705.

In 1994, another variation to this approval was granted by the LCC to extend mining activities to the north encompassing ML 1353 and ML 1354 including extension of surface reject disposal areas, water management and ancillary structures with the pit top. The approval was granted on 15 February 1994 and consented to the development outlined in the EIS prepared in 1993.

In 2005 Clarence received approval from the Department of Infrastructure, Planning and Natural Resources (now known as DP&E) for Development Consent DA 504-00. ML 1583 is wholly within the DA 504-00 area.

Two modifications (MODs 2 and 3) to the Development Consent DA 504-00 were granted by the Minister for Planning on the 27 May 2014. MOD 2 related to the establishment of Reject Emplacement Area (REA) VI and MOD 3 related to the haulage of coal by road to the west of the Blue Mountains through Lithgow.

A total of 18 non-administrative variations have been made to EPL 726 since 2001 pursuant to the Protection of the Environment Operations Act 1997 (NSW). Five of these variations occurred during 2011-2015 and related to the following:

- Changes to zinc and pH water discharge limits. Addition of L2.5 which states that the concentration limits are deemed not to apply when the discharge occurs solely as a result of rainfall in excess of 56 mm over any consecutive five day period. Deletion of Pollution Reduction Plan (PRP) U1.1 as works had been completed (Notice No. 1521882 12 June 2014).

- Deletion of PRP regarding best practice particulate management as it had been completed. Insertion of PRP U1.1 for wet weather improvement works including an upgrade of the polishing lagoon to meet Type D sediment basin. Inclusion of noise limits and noise monitoring requirements. Inclusion of air monitoring requirements (Notice No. 1514358 2 July 2013).
- Tightening of water discharge concentration limits under L2.4. Inclusion of a standard waste condition at L4.1. Inclusion of a PRP for best practice particulate management (Notice No. 19 December 2011).

Clarence's current Mining Operations Plan (MOP) 20014-2017 was approved by the DRE in November 2014. It was reported that the MOP will be revised again prior to the construction of REA V. During the audit period, Clarence obtained approval of the 800 SMP Area (7 May 2014) and 900 SMP Area (21 January 2014). SMP approvals relating to other areas reported on during the previous IEA were reported in the End of Year report to have expired as at 31 December 2014.

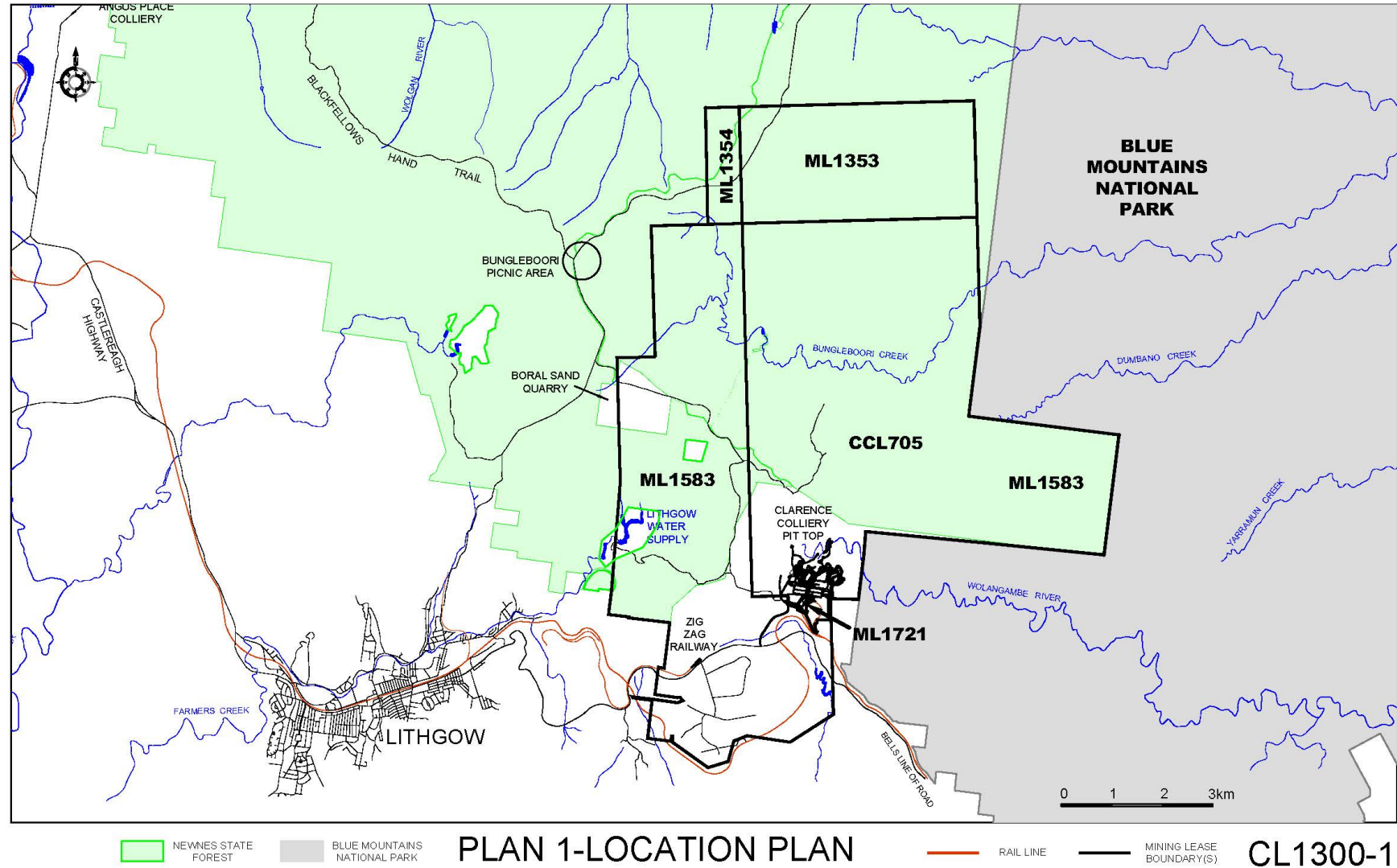


Figure 2-1 Location of Clarence Colliery, NSW
 (Source: Clarence Colliery Annual Review 2015(Location Plan))

2.3 Description of site operations

A full description of the site and operations is provided in Annual Environmental Management Reports (AEMRs) found on the site's website. In summary, Clarence Colliery consists of the following:

- Surface infrastructure including bathhouse and administration buildings, store warehouse, diesel refuelling station and storage shed, machinery washdown bay and workshop, equipment and materials storage areas;
- Coal Handling and Preparation Plant (CHPP);
- Reject Emplacement Areas (REA's) for reject from the CHPP;
- Mine ventilation fans and intake shafts;
- A rail loop and associated train loading infrastructure;
- A water management system including sediment ponds and other structures, a water treatment plant (WTP), a dam on the Wollongambe River as well as significant pumping and reticulation networks. These include storage tanks for Lithgow City Council (LCC) and an associated water pump; and
- Underground workings (partial extraction) - bord and pillar method that are extensive in nature that exist to the north and north west of pit top facilities under the Newnes Plateau and State Forest.

Adjacent third-party operations include Hanson (sand mining), a disused Rocla Quarry and Newnes Kaolin Project (approved quarry).

The nearest residential neighbours to the site are located at Newnes Junction approximately 1 km south of the Colliery pit top and adjacent to the Main Western Railway. Land to the east of the site is protected under the Blue Mountains National Park, one of the eight protected areas making up the World Heritage Listed Greater Blue Mountains Area (UNESCO 2013). The Newnes State Forest is located to the north and west of Clarence Colliery. The main landowner in the mining lease areas is NSW State Forests.

The majority of coal produced leaves via rail. Linking the pit top to Bells Line of Road is a sealed, 8.4 m wide access road (Clarence Colliery Road) which is also used by Hanson to transport extracted sand to Sydney and local markets.

2.4 Activities occurring during audit site inspection

At the time of the audit site visit, the following activities were occurring:

- Clean up associated with an incident which occurred on the 2 July 2015 involving a release of coarse and fine rejects off site into the Wollangambe River. This is discussed further in Section 5.
- Underground partial extraction of panels in the 700 area. Development and extraction within the 800 Area and 900 Area.
- Sizing and primary and secondary crushing of coal.
- Coal washing at the Coal Handling and preparation Plant (CHPP).
- Water treatment at the Water Treatment Plant (WTP)
- Clarence had installed a belt filter press at the CHPP in 2009 to dewater tailings. For the majority of the audit period, the filter press was not being used to treat fines resulting in coal fines being temporarily stored in the REA III holding cell. Following the incident in July 2015 this practice had ceased and the use of the filter press re-instated in early 2016.
- The following REAs were observed during the audit site inspection:
 - REA III: No works were being undertaken following the July 2015 incident.
 - REA VI: was being used for reject emplacement during the audit. It was reported it would be progressively rehabilitated.

- REA IV: Staged rehabilitation commenced in 2014.
 - REA V was approved but was yet to be constructed
 - REA I and REA II were rehabilitated in the 1990's.
- Upgrade of Leachate Dam 2 and construction of Leachate Dam 3.
- Exploration activities as per Clarence's exploration program

Photos of environmentally significant aspects of the operation, taken during the site inspection in January 2016, are provided in Section 6.

3 Compliance with Statutory Requirements

This Section fulfils the requirement to assess whether the project is complying with the relevant requirements in its Development Consent and any relevant Mining Lease and EPL.

3.1 Key statutory approvals

Table 3-1 identifies the major approvals, licences and leases in place for the Clarence Colliery and provides relevant information where applicable.

Table 3-1 List of Approvals, Licences and Leases

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date granted -Expiry
Department of Planning and Environment (DPE)	Development Consent (DA 504-00) (1998)	21 years from the grant of the mining lease
Lithgow City Council		(Date of Approval)
	Development Consent DAM 08.76	15/06/1976
	Development Consent 1993	01/07/1993
	Development Consent 1994	15/02/1994
Environment Protection Authority (EPA)	Environmental Protection Licence (EPL) No.726	Anniversary date 01 January
Industry and Investment NSW, Division of Resources and Energy (DRE)	Mining Lease 1353	1 August 2020
	Mining Lease 1354	27 May 2019
	Mining Lease 1583	25 November 2024
DRE	Consolidated Coal Lease 705	20/12/2027
Department of Primary Industries Water (DPI Water)	Surface Main Dam 10SL039344	25/01/2013
DPI Water	Bore licence 79 cut through mine Dewatering 10BL165054	21/09/2011
	Bore licence 82 cut through mine Dewatering 10BL165053	21/09/2011
DPI Water	Groundwater Monitoring Borehole Licences 10BL602819 10BL602820 10BL161964 10BL161965 10BL602213 10BL161962 10BL602211 10BL602212 10BL603337	Perpetuity
DRE	SMP Approvals 900 Area 800 Area 700 Area 700 West Area Eastern Area Outbye Areas	22/01/2014 - 31/01/2019 01/11/2013 - 31/10/2018 08/05/2009 - 01/05/2014 18/06/2012 - 01/06/2017 10/2005 – 01/06/2013 08/05/2009 – 01/05/2014

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date granted -Expiry
DRE	Section 126 REA II	Approved 19/06/1992
	Section 126 REA III	Approved 07/10/1993
	Section 100 REA IV	28/03/2011-01/07/2015
	Section 100 REA Iva	18/09/2013-01/09/2017
	Section 100 REA VI	11/08/2014-04/08/2017
Forest NSW	Occupation Permit	Renewed Annually

It is noted that not all Approvals listed above were considered in the audit. The audit assessed compliance with the following approvals:

- Development Consent DA 504-00
- 1976 Development Consent
- 1993 Modified Development Consent
- Environmental Protection Licence (EPL) 726
- Mining Lease (ML) 1583
- Consolidated Coal Lease (CCL) 705
- SMP 900 and 800 Area Approvals

3.2 Performance categories

The status of Clarence's performance during the audit, in respect of each condition of the Development Consent, EPL, CCL and ML is presented in **Appendix A**. Conditions considered to be not complied with, or indeterminate, have been listed in Section 10 of this report.

Performance categories in respect of compliance are defined as follows.

Table 3-2 Performance Category

Performance Category	Definition
Compliant	Currently in compliance. Sufficient verifiable evidence was available to demonstrate that the intent and all elements of the requirement of the regulatory instrument had been complied with within the scope of the audit.
Non-compliant	Currently not in compliance. Sufficient verifiable evidence was available to demonstrate that the intent of one or more specific elements of the regulatory instrument have not been complied with within the scope of the audit.
Administrative Non-compliance	A technical non-compliance with a condition of the consent that would not impact on performance and that is considered minor in nature (e.g. report submitted but not on the due date, failed monitor or late monitoring session). This would not apply to performance related aspects (e.g. exceedance of a noise limit) or where a condition had not been met at all (e.g. noise management plan not prepared and submitted for approval).
Not Verified	It has not been possible to determine whether compliance exists. Sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory instrument have been complied with within the scope of the audit was not available.
Not Activated	Condition not applicable at time of audit or had not been triggered
Not Assessed	the condition has not been assessed as part of the scope of this audit

Auditor's comments are provided next to each condition to explain evidence sighted relevant to each condition. Where considered relevant, observations have been made regarding specific compliance issues.

Conditions considered Non-compliant are presented in **Table 10-1**. The table includes a discussion of the compliance status and recommendations for improvement where appropriate.

Where conditions are considered compliant; however it is considered there is an opportunity to improve the compliance status of the condition, a recommendation has been made in the compliance table. A summary of these Opportunities for Improvement (OFIs) is provided in **Table 10-2**.

3.3 Compliance Management

Centennial has developed a compliance database to assist sites meet requirements of Project Approvals and associated plans, programs and strategies. The database allows conditions to be entered and actions to be automatically generated when a trigger is met. At the time of the audit site inspection, Clarence had entered its overarching documents into the database however the database was yet to 'go live' with links to evidence of compliance. Therefore the full functionality of the database was not observed during the audit.

3.4 Close out of recommended actions from previous IEA

An assessment of the actioning of the recommendations relating to non-compliances made in the previous IEA was undertaken and is presented in Appendix B. A detailed review of recommendations made throughout the previous IEA not relating to non-compliances (e.g. recommendations relating to the improvement of management plans) was not undertaken.

4 Environmental Performance

This Section addresses the requirement of the scope of the audit to “*assess the environmental performance of the Project and its effects on the surrounding environment*”.

Clarence has developed an Environmental Management Strategy and a number of environmental management plans to mitigate its effects on the surrounding environment and monitor the environmental performance of the Project. These are outlined in Section 6.

The auditors have based their assessment of Project environmental performance on the assessment of implementation of the site's management plans and monitoring programs as well as the assessment of compliance with the CoC, EPL, Mining Lease, Consolidated Coal Lease, and SMP approvals. The findings of this assessment are provided in the Compliance Matrix presented in Appendix A with the identified non-compliances and associated recommendations summarised in Section 10.

In addition, to further gauge the Project's environmental performance and impact on the surrounding environment, the auditors reviewed the environmental incidents and complaints recorded during the audit period. The discussion of incidents and complaints is provided below.

4.1 Incident Management

Centennial Management Standard 012 – External Environmental Reporting (EER Standard) provides standardised procedures to follow in the event of an environmental incident. The EER Standard states that Centennial sites, including Clarence, are to follow the environmental incident reporting procedures provided in the EER. Environmental incidents are categorised according to the severity of the incident, the remediation actions required, and the extent of regulatory action (if any). Categories are numbered from 1 to 5, as shown in Figure 4-1 below.

Figure 4-1 Categories of Environmental Incidents

Category and Definition		
1	Prosecution (Major)	<ul style="list-style-type: none"> major actual or potential material harm to the environment; and major remediation required; or the company has been convicted of the offence in a court of law
2	Offence (Significant)	<ul style="list-style-type: none"> significant potential or actual material harm to the environment; and significant remediation required; or a penalty notice has been received
3	Reportable (Moderate)	<ul style="list-style-type: none"> reportable incident to government agency as a condition of approval/licence or as required by legislation; and environmental harm has occurred (either on or off site) or is likely to occur (either on or off site) (using process described in Attachment 2); or incident outside predictions; or incident or complaint exceeds controls identified in management systems (including management plans, procedures and monitoring programs)
4	Technical (Minor)	<ul style="list-style-type: none"> licence/approval/standard exceedance or non-compliance; and no environmental harm (using process described in Attachment 2); and incident or complaint that exceeds controls identified in management systems (including management plans, procedures and monitoring programs) that is not a Category 3 incident, ie has not caused harm or is not outside predictions.
5	Incident (Low)	<ul style="list-style-type: none"> Incident or complaint – on site only within limits of the approved management plan or monitoring program; and No environmental harm with no need for remediation

The EER identifies the amendment to the *Protection of the Environment Operations Act 1997*, (POEO Act) requiring the EPA to be notified immediately after a person carrying out an activity becomes aware of a pollution incident that causes or threatens material harm to the environment. Once immediately reported to the EPA (and/or other relevant authorities, as required), the site must undertake an internal investigation to assess whether environmental harm has occurred or is likely to occur and the materiality of such harm. The EER provides guidance in the identification of environmental harm and materiality. Also included in the EER is a document to guide reporting of an environmental incident to the EPA Environment Information Line, and a template written report, to provide the EPA (and/or relevant authority) written notification of the incident, in accordance with Part 5.7 of the POEO Act and condition R2.2 of the site's EPL.

The Environment and Community Co-ordinator is responsible for reviewing the outcomes of the environmental incident investigation process, closing out the incident once the investigation has been completed, reporting the incident to appropriate regulatory authorities as per the EER and coordinating any corrective or preventative actions to be instigated. Clarence logs the incident in its ECD system which includes details of the environmental incident, investigations and any corrective or preventative actions.

The site's Pollution Incident Response Management Plan (PIRMP) contains details of how staff should respond to an environmental incident. The PIRMP refers to the following internal procedures for actions following a pollution incident:

- Pollution Incident Notification Requirements (SOP 2753)

- Pollution Risk Assessment (RA-2868)
- Surface Emergency Plan (GI-1860)
- Chemical/Hydrocarbon Spills (TARP-2625)
- Incident Report Form (FM-1133)

Table 4-1 summarises the number of incidents recorded during the audit period by category, as categorised by Clarence.

Table 4-1 Summary of Incidents Recorded by Category for the Period 2011 - 2015

Category	No. of Incidents
1: Prosecution (Major)	1
2. Offence (Significant)	0
3. Reportable (Moderate)	6
4. Technical (Minor)	18
5. Incident (Low)	0

Clarence recorded one major (Category 1 - Prosecution) incident during the audit period which is discussed separately in Section 5. It is noted this incident had not been formally logged in ECD at the time of the audit. No significant (Category 2 – Offence) incidents were recorded during the audit period.

Six reportable (Category 3 - Moderate) incidents were recorded during the audit period. These are discussed further in Section 4.1.1. Eighteen minor (Category 4 – Technical) incidents were recorded and are discussed in Section 4.1.2 below. This included seven complaints which are discussed in Section 4.2.

4.1.1 Reported Incidents

Excluding the 2 July 2015 incident, Clarence notified the EPA's Environment Line of incidents causing or threatening material harm to the environment on two occasions.

The incident on the 12 April 2012 related to a sludge spill at the WTP following maintenance to the sludge transfer system. The sludge entered the polishing lagoon however some material seeped under a pipe and entered downstream of LDP002. Clarence's spill response procedure was followed and the spill material cleaned up and removed. Temporary improvement measures were made to the water management system including a sediment fence and earthen bunds.

A second incident on the 23 February 2011 involved dirty water released from CHPP below Leachate Dam No.2 and entering a hanging swamp. In response to the incident, Clarence immediately installed a rock drain at the coal stockpile and installed sediment fences. The drainage line which entered the hanging swamp was diverted to Leachate No.2 Dam (completed May 2011) in accordance with the development of REA IV. A Pit Top Ecological Due Diligence Survey was also undertaken (completed December 2012) to identify the location and condition of other swamps around the Pit Top areas. Clarence was issued with an official caution by the EPA on the 16 March 2011 as a result of this incident.

The four other incidents categorised as Category 3 Moderate related to exceedances of EPL limits in 2011 and 2012.

A review of select incident reports indicated that incidents were generally responded to appropriately, with follow up actions recorded and implemented.

4.1.2 Minor incidents

A breakdown of the Category 4 incidents (not including reportable incidents or complaints) by nature of the incident is provided in **Table 4-2**.

Table 4-2 Number and nature of Category 4 (minor) incidents for the audit period 2011-2015

Nature of incident	No. of incidents
Water (exceedance of licence limits)	9
Water (failure to monitor)	1
Dust (failure to monitor)	1
Total	11

As can be seen from **Table 4-2** the majority of minor incidents related to exceedances of licence limits for water, predominately TSS, filterable manganese and dissolved iron. Three of these exceedances were in 2015, one in 2013, one in 2012 and the remaining four in 2011.

A review of the 2015 incidents indicated one was an exceedance of the TSS limit following a significant rainfall event. The other two related to the WTP not treating water effectively: one incident followed a power loss and the other incident was due to a problem with the dispersion valves. Following these incidents the WTP underwent a complete operational review which looked at capacity, bottle necks, short-falls and improvement opportunities.

The two incidents where monitoring was not undertaken was as a result of equipment being damaged or destroyed in the October 2013 bushfire.

During the audit site inspection, evidence of minor spills of oil were observed at the pit top however the review of the incident database did not indicate any Category 5 (low) incidents had been recorded.

OFI 16 CLR IEA 2016

Ensure all incidents, including minor Category 5 incidents are reported internally and logged into ECD.

4.2 Complaint Management

As required under its EPL, Clarence maintains community contact information lines (business hours and after hours). All calls coming through the after hours information line are directed to the Control Room which is staffed 24 hours a day, seven days per week. Community complaints are logged in into Centennial's Incidents and Enquiries Database (ECD) as incidents by the Environment and Community Coordinator. Following investigation, the Environment and Community Coordinator responds to the complainant within 24 hours.

Logged complaints include a reference number, complainant details, complaint type, date and time of occurrence, complaint details, investigation / cause, remediation details, implementation process, implementation date and details of consultation.

The auditors reviewed records of community complaints received by the site during the period 2011 – 2015. Seven complaints were received over this period. Five of these were received in 2013 and related to low frequency noise which is discussed further under EPL Condition M4.3 in **Appendix A**. One complaint was received in 2012, one in 2015 and none in 2011 and 2014.

The Environment and Community Coordinator discusses any complaints received at CCC meetings. The 2011, 2012, 2013 and 2014 Annual Environmental Management Reports (AEMRs) were reviewed and noted to include a summary and discussion of the complaints received during the respective reporting years (if any).

On the basis of information reviewed, it is considered that complaints were managed satisfactorily. The complaints reviewed appeared to be investigated and mitigation measures considered and implemented where practical and feasible. Complaints were responded to in a timely manner and

details were documented in Clarence's Incident and Complaints database. A complaint was received during the audit site inspection and it was observed by the auditors that the complaint response was given a high priority and promptly investigated by the Environment and Community Coordinator and the Mine Manager.

5 July 2015 Incident

5.1 Summary of incident

During the audit period Clarence was placing thickened coal fines from the CHPP into a temporary holding cell located on top of REA III. On the 2 July 2015, an incident occurred where the holding cell was overtopped resulting in coarse reject and liquid coal fines to overflow over the downgradient contour bank and REA toe drain and enter a drainage channel that flowed towards the Wollangambe River. The coarse reject had entered the drainage channel and travelled for some distance before being stopped by topographical and other features however the liquid coal fines had entered the Wollangambe River.

Upon becoming aware of the incident, Clarence ceased pumping to REA III and notified the relevant authorities.

5.2 Actions taken following the incident to minimise further impact

The following Actions were taken by Clarence to minimise the potential for further impact as detailed in its 2015 AEMR:

- Clarence ceased all works, emplacement of coarse reject material and coal fines on REA III on the 2 July 2015.
- The pipe that feeds material from the fines thickener tank was disconnected and tagged out of service.
- Water from the Primary arrester and the WTP slurry system were re directed to Leachate Dam 1.
- The area between the toe of the northern wall and the contour drain around REA III was reinstated.
- Sediment fence, straw bales, and other sediment control devices and structures were installed at nominal 50 m intervals as well as where required for additional pollution control down the full length of the drainage line.
- Six In-Stream Coir-Log-Fines-Entrapment- Structures (ISCLFES) were installed at strategic locations down the river between 3.5 km and 12 km.
- A daily inspection and maintenance regime of the REA toe drain leachate drain and drainage line sediment fence installation was developed and implemented.
- A weekly inspection and maintenance regime of the ISCLFES's was developed and implemented.
- Bushland regeneration contractors (the "Bush Doctor") and additional labour were engaged to commence clean up of material from the affected drainage line within 50 m of the confluence of the drainage line with the Wollangambe River.
- Clarence liaised with NPWS to enter the National Park to inspect the Wollangambe River.
- Coal deposits were manually removed from the river to bulka bags and the bulka bags removed by helicopter from the drainage line and National Park.
- Land and water remediation plans were developed in consultation with EPA, DRE, OEH, NPWS and were being implemented.
- Consultation with regulatory authorities was ongoing including providing weekly reports to the EPA.

5.3 Regulatory Response

5.3.1 EPA

The EPA inspected the site of the incident on the 2 July 2015 and issued a verbal clean up direction on the day and a formal Clean-Up Notice 1531813 the following day (3 July 2015). This Clean-Up Notice required ten Clean-Up Actions including ceasing all activities and pumping of coal fines at REA III, installing sediment fencing within the affected drainage line, developing and implementing a daily inspection and maintenance regime, investigating the stability of REA III and undertaking a fault analysis of the cause of the incident, removing accumulated coal related material within the drainage line and the Wollangambe River, developing a remediation plan and providing weekly reports to the EPA.

On 20 July 2015, the EPA advised the licensee (Clarence) it had complied with Clean Up Actions 1 to 10 of Clean-Up Notice 1531813. It was agreed that the Clean-Up Action to remove all accumulated coal fines deposits could not be achieved by the specified time frame and that this would be assessed as part of the review of the Draft Remediation Plan and included in another Clean-Up Notice.

Clarence in consultation with the EPA and NPWS undertook trials to establish methods to remove as much coal fine material from the river in the most efficient and environmentally acceptable way. These included placing low coir log barriers at strategic locations in-stream to trap any downstream movement of coal fines, use of a suction pump and emptying removed coal fines into a bulka bag and manual methods by hand using in-stream screening. The EPA considered these methods acceptable and issued a second Clean-Up Notice (1532719) on the 18 August to formalise the implementation of the clean up of the accumulated deposits of coal fines within the Wollangambe River. This Clean-Up Notice included seven Clean-Up Actions. These are summarised in Table 5-1 below.

Table 5-1 EPA Clean-Up Actions and summary of status during audit site inspection

No.	Clean-Up Action	Status during audit site inspection
1	The licensee must maintain the low, coir log coal fine barriers at the four locations depicted as "River Structures" on the map "Wollangambe River Drop Off Locations" dated 07/08/2015; Reference N:\SURVEY\REA3 FAILURE\PLANS\WOLLANGAMBE RIVER-DROP OFF, Centennial Coal, Clarence" and implement a maintenance program to remove any accumulated deposits of coal fines, or excessive build up of natural river bed sediments, until the EPA confirms in writing that this activity can cease.	Ongoing The coir log coal fine barriers were observed during the audit site inspection
2	The licensee, on receipt of this Clean-Up Notice, must remove accumulated deposits of coal fines within the Wollangambe River where they can be removed by either manual methods as observed by the EPA on 12 August 2015 or the use of a suction pump as observed by the EPA on 17 August 2015, by Tuesday 15 September 2015.	Ongoing Removal of accumulated deposits of coal fines from the river was continuing at the time of the audit site inspection.
3	The licensee must submit to the EPA by 1700 hours 24 August 2015 a Draft Revised Remediation Plan (Water - Zone 5) based on the methods that were tested in the trial, which is consistent with Clean Up Actions 1, 2 and 5.	Completed Sighted <u>Wollangambe Remediation Revised Draft Plan</u> dated 24 August 2015

No.	Clean-Up Action	Status during audit site inspection
4	The licensee must submit to the EPA by 1700 hours on Tuesday 15 September 2015 a Report on the removal of accumulated deposits of coal fines from the Wollangambe River, which includes the details of: (a) the distance in kilometres (kms) of the River from which coal fines have been removed; (b) the total quantity, measured in kilograms (kgs), of the accumulated deposits of coal fines removed from the Wollangambe River; (c) additional information about accumulated deposits of coal fines not previously available before 18 August 2015; and, (d) a program for continuation of further clean up of accumulated deposits of coal fines to be implemented in Clean Up Action 5.	Completed Sighted <i>Wollangambe Remediation Report</i> dated 15 September 2015
5	The licensee, from Wednesday 16 September 2015, must continue to implement a program for removing accumulated deposits of coal fines from the Wollangambe River at locations where they are identified based on additional information, until the EPA confirms in writing that the clean up can cease.	Ongoing Removal of accumulated deposits of coal fines from the river was continuing at the time of the audit site inspection.
6	The licensee must develop a Draft Environmental Monitoring Program to determine the state of the aquatic ecosystem for the Wollangambe River following the completion of the clean up activities, for a period of time not less than 18 months, concentrating on the section of the River below where the coal fines entered the River and downstream to at least 12 kilometres, and submit the Draft to the EPA by Friday 25 September 2015.	Completed Sighted the <i>Wollongambe Environmental Monitoring Program (Draft)</i> Dated 25 September 2015.
7	The licensee must continue to provide weekly reports as previously required (and for which compliance has already been achieved) by Clean Up Action 10 of Clean-Up Notice 1531813, and must now include details of compliance with or actions taken to comply with these clean up actions for the Wollangambe River, until the EPA confirms in writing that these weekly reports can cease. The weekly reports must include: (1) the weekly and cumulative total of the weight (kgs) of all coal fines removed from the Wollangambe River; and, (2) the weekly and cumulative total of the distance (kms) of the River that has been cleaned up.	Ongoing. Sighted examples of weekly reports provided to the EPA.

A media release dated 7 July 2016 on the EPA website reported that “EPA officers carried out the final inspection on 29 June and on 5 July 2016 confirmed that conditions of the Clean-Up Notice had been met. The EPA advised Clarence Colliery that the clean-up operation of the Wollangambe River can cease. The company is now required to carry out a monitoring program of the Wollangambe River for two and half years to assess the recovery of the river environment.”

The EPA commenced a Tier 1 prosecution against Clarence in May 2016.

5.3.2 DRE

DRE issued a Direction under S240 Mining Act 1992 to cease using REAs as holding cells for thickened coal fines, tailings and liquids (taking effect from 5pm on 21.07.15). The Direction also included a requirement to engage a suitably qualified engineer to carry out an assessment, and report on, the use of the REAIII for the storage of thickened coal fines, tailings or liquids on top of the emplacement areas.

The DRE also issued a Notice to Provide Information and/or Records under Section 248B(1) of the Mining Act 1992 on the 1.12.15. This was replaced by a second Notice to Provide Information issued on the 7.01.16. Information (as outlined in a Schedule of Requested Documents) was required to be provided by the 25.01.16. The records and information requested in the notice was to allow the department to determine if Clarence was conducting activities in accordance with its approved MOP and its mining authorisation.

5.3.3 Trade & Investment Mine Safety

Following the incident, Trade & Investment Mine Safety issued Clarence with:

- S191 Improvement Notice 20150703DJM (issued under Section 191 of Work Health and Safety Act 2011) requiring an independent geotechnical engineer review the stability of the northern end of REA III and the development of a plan to manage the hazards of cleaning up the area between the REA and the Leachate dam.
- S198 Non-disturbance Notice 20150702TDM requiring the site to be preserved until a competent person determines the area is safe and a government official releases the scene.
- S195 Prohibition Notice 20150702MJC stating that no person shall be in the vicinity or work around REA III unless for the purpose of preventing further environmental harm or preventing further deterioration of emplacement retaining wall.

Confirmation that the requirements of the S191 and S198 Notices were met was obtained by Trade & Investment Mine Safety letter dated 7-7-15. Following a number of inspections and the review of documentation provided (including geotechnical reports) Trade & Investment Mine Safety agreed to rescinding the S195 Prohibition Notice by letter dated 30.07.15.

5.4 Observations during audit site inspection

The following observations were made during the audit site inspection on 12 and 13 January 2016:

- No activities were being undertaken at REA III in accordance with the DRE Section 240 Direction.
- Clean up activities were continuing. The Bush Doctors were undertaking manual in-stream coal deposit removal.
- Rehabilitation of the drainage channel had been undertaken.
- Weekly reports to the EPA continued to be provided (sighted examples).

Table 5-2 provides some photos of the incident area observed during the audit site inspection.

Table 5-2 Observations of the July 2015 incident area during the audit site inspection on 12 and 13 January 2016


Photo #	Comment	Photo
5-1.	Rehabilitation of area between toe of the northern wall and the contour drain around REA III (photo is looking down from the batter of REA III)	



Photo #	Comment	Photo
5-2.	<p>Rehabilitation of drainage channel looking upslope to REA III northern wall</p> <p>(photo is looking up from the contour drain below REA III)</p>	
5-3.	<p>Rehabilitation of drainage channel below REA III looking down along the channel</p>	
5-4.	<p>Examples of sediment control devices installed along drainage channel</p>	

Photo #	Comment	Photo
5-5.	Wollongambe River post clean up near location of where the drainage channel joined the river.	
5-6.	Coal fines storage area above REA III looking back to the CHPP.	

This incident remains part of ongoing, multi departmental investigations. This audit report has not endeavoured to provide an assessment or comment on these investigations.

6 Site Inspection Observations

Observations from the site inspection conducted at the time of the site audit are provided in **Table 6-1**.

Table 6-1 Site Inspection Photographs – Pit Top Area

Photo #	Comment	Photo
6-1.	Pit top area showing drift with men and materials access; various stores and open storage areas.	
6-2.	Some oils spills were observed outside the 20L drum crushing area. Refer REC 31 CLR IEA 2016	




Photo #	Comment	Photo
6-3.	<p>The washdown bay receiving basin (Grit Trap) was full of coal fines on 12 January 2016. Oil water separators at this location were not operational and not planned to be replaced.</p> <p>The grit trap has a pipeline to the Primary Arrestor (described below).</p> <p>It had been cleaned out prior to second site visit on 7 March (see below).</p> 	
6-4.	<p>Runoff from the coal stockpiles and the CHPP is directed to the Primary Arrestor.</p> <p>Water from the Arrestor was previously pumped to REA III.</p> <p>Since the EPA notice post the July Incident, water from the Arrestor has been directed to the Leachate Dam 1.</p> <p>Arrestor overflows are directed to the Polishing Lagoon.</p>	




Photo #	Comment	Photo
6-5.	<p>Bulk diesel fuel tank and bowser area near the silt arrestor at the CHPP. The bowser area was not bunded, however drained to the silt arrestor. Some minor diesel spills were observed near the refuelling area.</p> <p>Refer REC 31 CLR IEA 2016</p>	
6-6.	<p>The water treatment plant (WTP). The WTP treats approximately 25ML per day.</p>	
6-7.	<p>Treated water from the WTP is directed to a small pond. Some flocs from the WTP get to the pond. Booms have been installed on the ponds to trap these flocs.</p> <p>The pond discharges to Licensed Discharge Point 2 (LDP 2) and then to the Main Dam (70 ML capacity) and then to the Wollongambe River.</p>	




Photo #	Comment	Photo
6-8.	<p>Polishing Dam. The dam receives runoff and discharge from the pit top area including overflow from the wash down basin. Discharge from this location is directed to LDP2.</p> <p>There is a risk of elevated TSS and contaminants in discharge from the Polishing Lagoon.</p> <p>Refer REC 01 CLR IEA 2016</p>	
6-9.	<p>Polishing dam discharge point. The discharge point is a vertical pipe in the centre of the dam that directly links to LDP 2.</p>	
6-10.	<p>Licensed Discharge Point 2. Water from the WTP and the Polishing Lagoon discharge at this point. The high WTP discharges dilute the potentially poorer water quality of the Polishing Lagoon.</p> <p>Clarence are reliant on the dilution of Polishing Lagoon water by WTP discharge to meet EPL licence limits in times of rainfall and high runoff from pit top areas to the Polishing Lagoon.</p> <p>Refer REC 01 CLR IEA 2016</p>	



Photo #	Comment	Photo
6-11.	<p>Leachate Dam 1. This dam receives sludge from the WTP and water from the Primary Arrestor and discharges down a borehole to underground workings. At the time of the inspection WTP residues were collecting on the surface of the pond. Long reach excavators had been used to remove some of this sludge, however was not fully successful. Clarence noted that they would use a floating dredge to remove this sludge.</p> <p>Clarence noted these materials used to go to REA III and were rapidly redirected as a result of the EPA Notice to stop works in REA III. The management and disposal of WTP sludge is an ongoing challenge for Clarence.</p> <p>Refer REC 04 CLR IEA 2016</p>	
6-12.	<p>The Main Dam. The dam is located in the Wollangambe River. It has a capacity of 70 ML and discharges over a weir.</p>	

Table 6-2 Site Inspection Photographs – Reject Emplacement Areas




Photo #	Comment	Photo
6-13.	<p>REA III (viewed from Leachate Dam 2).</p> <p>This reject emplacement area has not been rehabilitated. Rehabilitation of the REA III should be a high priority for Clarence.</p> <p>Refer REC 09 CLR IEA 2016</p>	
6-14.	<p>REA III (viewed from near Leachate Dam 2).</p> <p>As above. Trees growing in the toe of the batter of REA III.</p>	
6-15.	<p>Leachate Dam 2. The dam is situated below REA II and collects runoff from REA II and REA IV.</p> <p>Leachate Dam 2 is designed as a zero discharge system and was upgraded in 2014 to a capacity of 10ML.</p> <p>It drains to Leachate Dam 1 via underground pipeline. There is a catch drain directed to Leachate dam 1 below the dam.</p> <p>During high rainfall, Leachate Dam 2 has the potential to overflow (through LD4), however has not overflowed since its upgrade in 2014.</p>	




Photo #	Comment	Photo
6-16.	<p>Leachate Dam 2. Below the dam, sand has been deposited and collected behind a silt fence.</p> <p>Refer REC 05 CLR IEA 2016</p>	
6-17.	Rehabilitation on REA II	
6-18.	<p>Rehabilitation on REA IV.</p> <p>Some weeds were evident in this rehabilitation (see below).</p>	




Photo #	Comment	Photo
6-19.	<p>Some weeds were evident in REA IV. Given the location of the mine, weeds should be addressed promptly so as not to propagate into adjacent bushland.</p> <p>Refer REC 10 CLR IEA 2016</p>	
6-20.	<p>REA IV looking across to REA II and REA III.</p> <p>Lighter coloured soil has been placed on REA III as cover material. The lack of rehabilitation of REA III and the resulting contrast of colours in the landform could be considered as a high visual impact relative to the background scenery.</p> <p>Refer REC 09 CLR IEA 2016</p>	
6-21.	<p>REA IV. Some areas of REA 4 had very sparse vegetation; although were free of weed.</p> <p>Clarence stated that they recognised issues with rehabilitation including weeds and lack of cover in REA IV. It was stated a plan was being developed to address these issues.</p> <p>Refer REC 10 CLR IEA 2016</p>	




Photo #	Comment	Photo
6-22.	<p>REA IV. Some areas of REA IV had very sparse vegetation; although were free of weed.</p> <p>Refer REC 10 CLR IEA 2016</p>	
6-23.	<p>Rehabilitation on REA IV.</p>	
6-24.	<p>Sand accumulated in drainage structures below REA IV.</p> <p>Ongoing management of sediment and erosion is a challenge while the rehabilitation becomes established.</p> <p>Refer REC 05 CLR IEA 2016</p>	


Photo #	Comment	Photo
6-25.	<p>REA VI. Rejects emplacement was occurring in REA VI at the time of the inspection.</p> <p>Leachate and runoff from the area is directed to the dam at the base of the REA.</p>	

Table 6-3 Site Inspection Photographs – Rehabilitation of boreholes and Subsidence Monitoring

Photo #	Comment	Photo
6-26.	<p>800 series borehole rehabilitation and piezometer (CLRP17).</p> <p>These areas were burnt out in the October 2013 fires.</p> <p>Rehabilitation was good in the area with no weeds evident.</p>	

Photo #	Comment	Photo
6-27.	<p>800 series borehole rehabilitation and piezometer.</p> <p>These areas were burnt out in the October 2013 fires.</p> <p>No weeds were evident.</p>	
6-28.	<p>Subsidence monitoring (Feno) markers for the 800 area.</p> <p>The Feno markers do not require the same extent of clearing as more traditional monitoring, hence were not observed to form preferred pathways for motorbikes, which has occurred for other monitoring lines historically.</p>	

7 Review of Environmental Management System

This Section fulfils the requirement to assess the adequacy of the Environmental Management Strategy and the Environmental Monitoring Program. The implementation of the Strategy, and Environmental Monitoring Program (as well as other management plans) is discussed in **Appendix A**.

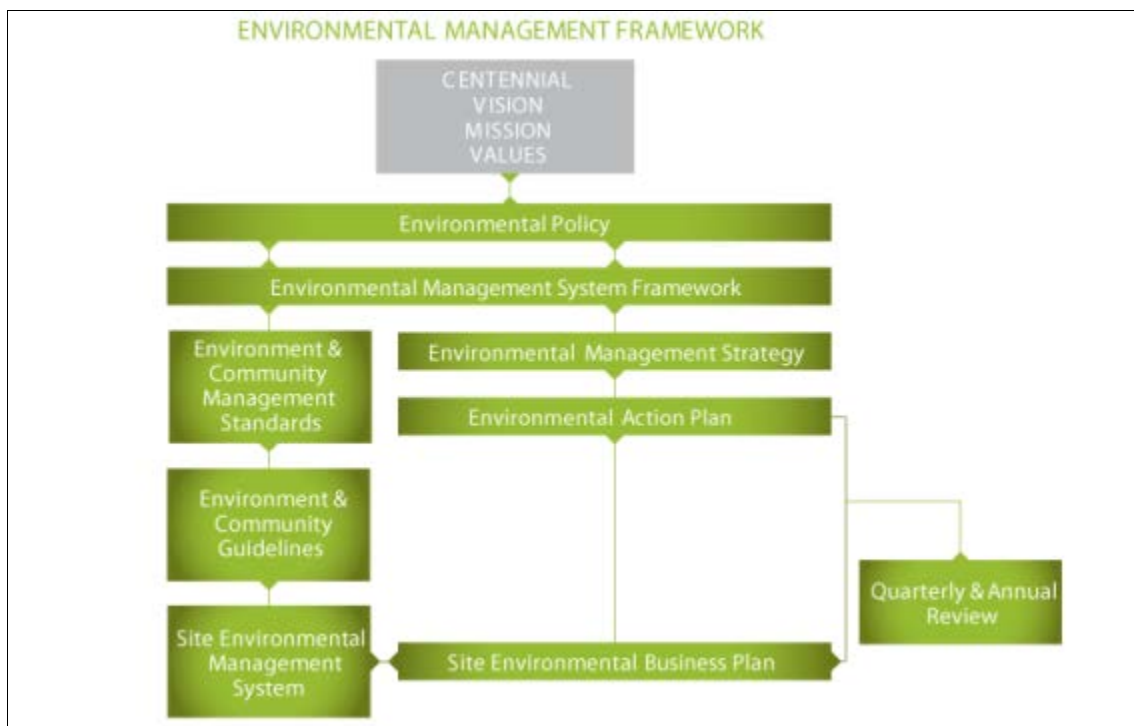
Where opportunities for improvement were identified, an OFI was recorded and presented in Table 10-2.

7.1 Environmental Management Overview

7.1.1 Centennial Coal Policy and Framework

Centennial Coal has established an Environmental Policy and Environmental Management System (EMS) Framework, as well as a number of Environment and Community Standards. The policy, EMS Framework and associated procedure provide guidance to Centennial's sites, such as Clarence, on the development of their own Environmental Management plans. Centennial's Environmental Management Framework is depicted in **Figure 7-1** below.

Figure 7-1 Centennial Environmental Management Framework



Centennial Coal has developed an Environmental Management System Framework Document incorporating the following four components:

- EMS Framework Document (Volume 1)
- EMS Procedures (Volume 2)
- Environment and Community Management Standards (Volume 3)
- Environment and Community Management Plans (Volume 4)

The EMS Framework is applicable to all activities and areas managed by Centennial. The purpose of the EMS Framework is to provide an effective management tool, which will foster sound environmental management of all EMS Framework that each Business Unit, such as Clarence, develop an Environmental Management Strategy, consistent with the EMS Framework objectives.

The detail of the Centennial Coal EMS Framework and the site implementation of these documents were not assessed during the audit.

7.1.2 Clarence Colliery Environmental Management

Clarence has developed an Environmental Management Strategy (the Strategy) which operates under the overarching Centennial Coal Environmental Policy and EMS Framework. An assessment of the adequacy of the Environmental Management Strategy is provided in Section 7.2.

Clarence has developed the following supporting management plans to manage environmental aspects and impacts of operational activities:

- Water Management Plan, incorporating:
 - Erosion and Sediment Control Plan
 - Surface Water Monitoring Program
 - Groundwater Monitoring Program
 - Surface and Groundwater Response Plan
- Environmental Air Quality Monitoring Program
- Centennial Noise Management Plan Western Region (Clarence specific requirements provided in Appendix C)
- Western Region Aboriginal Cultural Heritage Management Plan (Clarence specific requirements provided in Attachment 3)
- Subsidence Management Plans (SMP)
- Waste Management Plan (not required by Development Consent)

The monitoring requirements of the above plans have been consolidated into an Environmental Monitoring Program. The adequacy of this program is discussed further in Section 7.3.

Subsidence management and the processes associated with the development of SMPs as well as an assessment of the adequacy of these processes are discussed separately in Section 8.

7.2 Environmental Management Strategy

Development Consent Schedule 5 Condition 1 states that:

“Within 12 months of the date of this consent, the Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:

- (a) provide the strategic context for environmental management of the development;*
- (b) identify the statutory requirements that apply to the development;*
- (c) describe in general how the environmental performance of the development would be monitored and managed during the development;*
- (d) describe the procedures that would be implemented to:*
 - keep the local community and relevant agencies informed about the operation and environmental performance of the development;*
 - receive, handle, respond to, and record complaints;*
 - resolve any disputes that may arise during the course of the development;*
 - respond to any non-compliance;*
 - manage cumulative impacts; and*
 - respond to emergencies; and*
- (e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development; and*

(f) be updated within 3 months of the completion of each Independent Environmental Audit.

The original Environmental Management Strategy (CL-EWP-P-010 Rev0) was developed and approved by the DPE during the previous audit period. The Environmental Management Strategy was last revised in 2014. The revised Strategy was not submitted to the DPE for approval or for their information.

A review of the 2014 Strategy indicated the above requirements had been generally addressed.

The Strategy requires updating to ensure it is current. During this update, the following opportunities for improvement could be considered.

OFI 17 CLR IEA 2016

Consider the following during the next update of the Environmental Management Strategy:

- Update references to ensure the most relevant documents are referred to (e.g. MOP, Lithgow Local Environmental Plan)
- Include within the Statutory Requirements section a list of the key licences and approvals specific to the site (e.g. Development Consent, EPL, Mining Leases, MOP, Subsidence Plans, Dangerous Goods Notifications, Authorisations, Water Licences etc.)
- Ensure sections on air and noise reflect current operations (e.g. a sampling unit to measure TSP and PM₁₀ has been installed, noise complaints have been received).
- Revise Emergency Procedures section to discuss the requirements of POEO Act and Regulations for reporting pollution incidents immediately to relevant agencies and to reference Clarence's Pollution Incident Response Management Plan (PIRMP).
- Include within the Environmental Non-Compliance Section discussion of how incidents and non-compliances are logged and managed using Centennial's internal incident reporting system ECD.
- Include the requirements of the POEO Act to publish pollution monitoring data collected as a result of a licence condition.
- Update the Cumulative Impact Assessment section to reflect actual operations taking place in surrounding area.
- Better outline the links between the Strategy, Management Plans and EMS including Centennial Coal Standards and Procedures. This could be in the form of a framework diagram.
- Submit the revised Strategy to DP&E.

7.3 Environmental Monitoring Program

The Environmental Monitoring Program consolidates the various monitoring requirements of the Development Consent (and EPL) into a single document. Specifically the Environmental Monitoring Program includes monitoring requirements related to:

- Surface water
- Groundwater
- Air quality
- Noise

It was last updated in 2007 and hence does not reflect changes that have occurred since this time including updates to the EPL.

On the basis that the program is intended to summarise the site's monitoring arrangements, it is considered to be generally adequate. However the following are noted.

- The EPL requires annual attended noise monitoring as well as 5 days of unattended noise monitoring. The unattended monitoring requirements are not documented within the Environmental Monitoring Program.

- A formal management plan / monitoring program has not been prepared for flora and fauna management and weed control although it is noted that flora and fauna management is outlined in the area specific SMP Environmental Monitoring Programs and that weed control activities were being conducted. The Environmental Monitoring Program could summarise the flora and fauna monitoring undertaken.
- As documented in the Centennial Coal Draft Air Quality and Greenhouse Gas (AQGHG) Management Plan for the Western Region (January 2016), Clarence proposes to remove TSP monitoring from the long term monitoring network on the basis that TSP can be estimated from PM10 readings by applying a factor which has been calculated from long term PM10 and TSP monitoring data. It proposes configuring the PM10 real time unit to operate continuously rather than for only two months of the year. No changes are proposed to the short term monitoring network which includes real time PM10 and TSP monitoring.

The previous IEA made the following recommendations relating to the surface water monitoring program:

- On the basis that there has been long-term site discharge of treated water to the Wollangambe River system, it is considered appropriate that the existing surface water monitoring program be expanded to those water quality parameters as relevant in the Main Dam for comparison against relevant ecosystem protection guidelines. The frequency of monitoring would require further consideration. The site should consider derivation of risk-based criteria established on the basis of receiving waters monitoring, as described in the existing Water Management Plan.
- On the basis that a significant proportion of the site's treated water is utilised (via Farmers Creek) by Lithgow City Council for further treatment and potable water supply, it is recommended that Clarence consult with stakeholders (e.g. DPI Water, LCC) to develop a water quality monitoring program for the water leaving site. This program requires identification of relevant criteria, action levels, and associated corrective actions.
- Other mines in the region that have ongoing and significant water discharges to the environment have either been required by EPA under pollution reduction programs or have self-initiated broader water quality and ecological assessment of waterways in catchments surrounding their operations. It is recommended that Clarence consider the implementation of additional water quality and ecological monitoring in downstream water ways to provide baseline data from which to assess potential changes to discharges that may occur in the future discharge volumes.

The above recommendations have largely not been actioned and are still considered relevant. It is noted that aquatic ecology monitoring in the Wollangambe River has been undertaken seasonally by specialist consultants Marine Pollution Research (MPR) since 2012. In addition, since the July 2015 incident, as required by a Clean Up Action, Clarence has prepared and commenced implementing a Draft Environmental Monitoring Program to determine the state of the aquatic ecosystem for the Wollangambe River following the completion of the clean-up activities for a period of time not less than 18 months

The Environmental Monitoring Program requires updating to ensure it is current. During this update, the following opportunities for improvement could be considered.

OFI 18 CLR IEA 2016

Consider the following during the next update of the Environmental Monitoring Program:

- Include the unattended noise monitoring requirements of the EPL.
- Include a summary of the various flora and fauna monitoring requirements of the Area specific SMP Environmental Monitoring Programs.

- Ensure the section on air quality monitoring reflects the revised long term air monitoring requirements proposed in the Draft Western Region AQGHG Management Plan (once approval is received).
- Ensure surface water and groundwater monitoring requirements reflect what is currently undertaken and the EPL.
- Expand the existing surface water monitoring program to include water quality parameters relevant in the Main Dam for comparison against relevant ecosystem protection guidelines. The frequency of monitoring would require further consideration.
- Include a discussion of the aquatic ecology monitoring undertaken in the Wollongambe River.
- Include a summary of the monitoring requirements of the Draft Wollongambe Environmental Monitoring Program.
- Develop a water quality monitoring program (in consultation with DPI Water and LCC) for the treated water leaving site via Farmers Creek used by LCC. This program requires identification of relevant criteria, action levels, and associated corrective actions.
- Submit the Monitoring Program to DP&E.

8 Subsidence Management

8.1 Background

Subsidence is currently being managed under two Subsidence Management Plan (SMP) Approvals relating to the 800 and 900 areas of underground operations at Clarence. The End of Year Reports for 2014 and 2015 list the following approvals and variations to the approvals:

900 Area

- Submission of the 900 Area SMP Application (11th September 2013). The 900 Area was approved on 21 January 2014.
- Notification letters regarding the approval were circulated on the 30th January 2014.
- The 900 Area Variation 1 was submitted on the 24th February 2014 and was approved on 7th May 2014.
- The 900 Area Variation 2 was submitted on the 4th December 2014 and was approved on 10th February 2015.
- The 900 Area Subsidence Monitoring Program was submitted on 24th February 2014 and was approved on 7th July 2014.
- The 900 Area Public Safety Management Plan was submitted on 24th February 2014 and was approved on 23rd April 2014.

800 Area

- The 800 Area Variation 1 was submitted on the 14th March 2014 and approved on 7th May 2014.
- The 800 Area Variation 2 was submitted on 25th August 2014 and approved on 29th September 2014.
- The 800 Area Variation 3 was submitted on the 3rd September 2015 and approved on 16th November 2015.
- The 800 Area Subsidence Monitoring Program was submitted on the 13th January 2014 and was resubmitted again on the 30th May 2014. Approval for 803 Panel was granted on 4th July 2014 and approval for 810 panel was granted on 21st October 2014. Presently, subsidence monitoring is only approved for the 810 panel.
- The 800 Area Public Safety Management Plan was submitted on 28th January 2014 and was approved on 23rd April 2014.
- The 800 Area Environmental Subsidence Monitoring program was submitted on 21st May 2014 and was approved on 19th June 2014.
- The 800 Area Limited Subsidence Monitoring Program for the 812 and 814 Panel was submitted on 19th March 2015 and was approved on 13th August 2015.

The following approvals were reported in the End of Year report to have expired as at 31 December 2015:

- The 602 Panel 50-57 cut-through (as part of the Outbye SMP Approval) was approved on 19th June 2008 and expired in 2010.
- The 602 Panel (as part of the Outbye SMP Approval) was approved on 30th January 2009 and expired on 1 January 2010.
- The 402 Panel (as part of the Outbye SMP Approval) was approved on 27th March 2009 and expired on 1 January 2010.
- The Eastern Area Subsidence Management Plan was approved on 27th July 2006 and expired during 2013.

- The 700 Area Subsidence Management Plan was approved on 8th May 2009 and expired on 1 May 2014.
- The Outbye Area Subsidence Management Plan was approved on 8th May 2009 and expired on the 1 May 2014
- The 314 & 316 Area Subsidence Management Plan was approved on 19th February 2010 and expired on 1 February 2015.

The SMPs have been prepared in accordance with the Guidelines for Subsidence Management Approvals, December 2003 published by the then NSW Department of Mineral Resources (generally referred to as the SMP Guidelines), with each SMP Application including the following key elements:

- **SMP Written Report** (Volume 1 of the SMP Application), which provides the technical detail for the application, including mining systems, site conditions, prediction of subsidence and assessment of subsidence effects
- **Subsidence Management Plan** (the SMP, Volume 2 of the application), which provides the implementation and administrative framework for subsidence management, including general monitoring requirements for key aspects including coal pillar stability, surface subsidence deformations, surface water, groundwater, flora, fauna, aboriginal archaeology and heritage, firetrails, powerlines and telecommunications lines, and private property.
- **SMP Approved Plan**, and other SMP Plans to support Volumes 1 and 2.

Under the SMP, details of the monitoring of subsidence effects are managed via the applicable

- **Environmental Monitoring Program** (typically for groundwater, surface water, flora, fauna (including swamps) and archaeology)
- **Subsidence and Underground Monitoring Program** (for pillar performance, subsidence surveys, pagoda and cliff condition, general surface inspection).

8.2 Compliance with SMP Approvals

Compliance has been assessed with the SMP approvals for the 800 and 900 areas. The results of the compliance assessment are provided in the compliance checklists presented in Appendix 1. A high level of compliance with the SMP approvals was noted with no non-compliance observed.

8.3 Plan Development

8.3.1 Partial Extraction Layout Design and Subsidence Prediction

The previous IEA URS (2011) noted the following in regard to mine design:

“After operating as a bord and pillar mine from 1979, for several years from 1993 Clarence Colliery carried out longwall extraction. This was not successful due to unfavourable geological and geotechnical conditions, and since its acquisition by Centennial Coal in 1998, mining at Clarence has involved partial extraction using bord and pillar techniques. The basis of the extraction method is to keep roof spans sufficiently short to restrict any caving effects to the immediate roof strata, and for the remnant coal pillars and barriers to be permanently stable. Under these conditions, strata conditions from seam floor to surface are intended to remain “elastic”, and as a consequence surface subsidence can be considered to be approximated by the “elastic” compression of the pillars and their immediate roof and floor strata. As part of the design study for the 700 area SMP, numerical modelling was carried out using a three-dimensional displacement discontinuity code “Lamodel” to verify that the simplified analysis method provides a reasonable assessment of surface subsidence movements for the adopted partial extraction system.

The DoP development approval conditions typically require that subsidence generated by the development does not exceed 20mm for first workings, and 100mm for partial extraction, with tilt limits

of 1 mm/m and 3 mm/m respectively, and strain limits of 1 mm/m and 2 mm/m respectively (it is noted that the approvals for Partial extraction is part of the SMP process).

Consequently, the design of the underground workings to achieve satisfactory subsidence performance consists of two main steps:

- Design of the partially extracted workings layout to result in pillars which have adequate long-term stability
- Assessment of expected subsidence due to the elastic compression of the pillars and their immediate roof and floor strata as a consequence of the stress increases due to the partial extraction, to confirm that subsidence effects are likely to be within the approval limits noted above.

The 900 Area application confirms the continued approach to mine design and notes the following with respect to the 900 Area:

“The mining system for the proposed SMP Area is the partial-pillar extraction system which has been in place for the last 13 years and carried out within ML 1583, CCL 705 and ML 1353. This system has been designed such that remnant pillars that remain within and between panels are long-term stable. Data from subsidence monitoring have proven that this method of extraction results in extremely low levels of subsidence. Unlike full extraction mining, partial extraction minimises subsidence through leaving a proportion of the resource in situ. This provides support to the overlying strata, minimising the breakage and falling of the overburden and maintaining the integrity of the aquifers above. Within the proposed SMP Application Area, maximum vertical long-term, post flooding (assuming the area will be flooded following extraction activities) subsidence is predicted to not exceed 100 mm (but may typically range from 60 - 70mm). This level of subsidence is typically considered to be negligible. Verification of the modelling process along with performance monitoring over areas previously extracted (based on many years of data) provides great confidence that proposed mining in the SMP Application Area using the same mining method will have negligible impacts.”

The design of the partial extraction arrangements for stability and subsidence has historically been carried out by Strata Engineering (Australia) P/L, (now Golders). As defined in Section 5.3 of the Subsidence Management Plan for the 900 area, Golders conducted a review titled “Long-term stability of bord and pillar panels planned for secondary partial extraction in the 900 area, including subsidence estimates” dated 19 August 2013.

The conclusion of the Golders’ review was “The various layouts associated with partial extraction in the 900 Area are all considered long-term stable in their final state. Subsidence outcomes are expected to be consistent with previous partial extraction experiences, both in the short / medium and long-term. Subsidence is consistently predicted to be <100mm, with no expected impacts.”

8.3.2 Trigger Action Response Plans

Based on the pillar stability and subsidence design assessments, and on the results from a risk assessment, a Trigger Action Response Plan (TARP) has been developed for each SMP, addressing the broad areas of

- Pillar stability (including pillar size, roadway height, rib spall and deformation, roof falls, geological structure)
- Subsidence (after-mining measured subsidence)
- Environment/Public Safety (including piezometric head change, water quality change, surface cracking, cliffline/pagoda instability, underground water make)

The TARP which is consistent across the 900 and 800 SMP areas was last updated on 4 December 2015. The TARP now includes a quick guide layout detailing roof and wall support requirements.

8.3.3 Subsidence Monitoring (Surface Monitoring)

Subsidence Monitoring is described in Subsidence and Underground Monitoring Programs for each of the 800 and 900 areas. Approvals of the Monitoring Programs by the Mine Safety Principal Subsidence Engineer were sighted.

The previous IEA (URS 2011) noted that “*subsidence monitoring by conventional survey methods along panel centrelines and crosslines and has been and is being carried out within the various areas of partial extraction*”.

In the Monitoring Programs for the 800 and 900 series Clarence has installed low profile subsidence markers. The 800 area Monitoring program states “*Traditional subsidence lines are not suitable adjacent to access tracks or in areas of the 800 Area due to the risk of vandalism, safety issues if pegs protrude from the ground and the need to exclude clearing for marker installation. Clarence proposes to install Feno marks adjacent to existing tracks or closely spaced markers in more vegetated areas where access is safe, practical and reasonable. The subsidence markers will be used for level measurement only (i.e. no tilts or strains).*”

Feno marks maintain the same accuracy for level measurement as star pickets used previously, but are not suitable for strain measurements. Feno marks have the following advantages:

- *Improved safety on installation due to lightness; and*
- *Reduced public safety risk compared to steel pegs as they are installed flush with the ground.*

The use of Feno markers avoids the need to conduct measurement with steel tape, and hence reduces the requirements for vegetation clearing. Feno markers were observed by auditors in the 800 area (810 Panel) along an access road within the area. Where markers were placed along the road no clearing was required.

Due to the rugged terrain particularly associated with gorges and cliff-lines within and bordering the Newnes Plateau, some subsidence monitoring is being carried out on individual rock marks and photographic monitoring of cliffs and pagodas is also an important element of the subsidence monitoring program for some areas.

Quarterly inspections are undertaken of areas above mining activities. A Pre and Post mining inspection report was sighted for 810 Panel (*810 Panel – Pre mining inspection (20th May 2014) and Post Mining (4th May 2015) Inspections*). This included photographs for comparison pre and post mining.

In October 2013 a fire occurred that is understood to have originated in the Defence Training area at Marangaroo, west of Lithgow. The fire burnt out many areas of the mining leases at Clarence affecting some subsidence monitoring lines through burning of the monitoring markers. In addition, Forests NSW have cleared pine forests in the area of the A Line monitoring plot removing or damaging some monitoring locations in this area. In addition, collectively, approximately 50% of pegs associated with the 609D line have been lost.

On a four-monthly basis a Subsidence Management Status Report is provided to various regulatory authorities that presents subsidence monitoring data.

8.3.4 Underground Monitoring

The Subsidence and Underground Monitoring Programs also detail the monitoring required underground to ensure mining is according to the approved SMP. The monitoring includes:

- Monitoring of roadway widths and intersection heights;
- Pillar stability monitoring
- Weekly strata audits
- Post extraction audits.

This audit did not complete a detailed assessment of compliance with all of the requirements of the Subsidence and Underground Monitoring Programs, however, various documents were sighted that demonstrated monitoring was being undertaken. These included:

- monitoring data for roadway widths and intersection heights conducted by the Under Manager (data is presented in End of Year Reports);
- 901 Post Panel Extraction Audit (17 April 2015) by the Mine Geologist. This included confirmation of actual final pillar dimensions and general condition, pillar stripping depths and working heights, and floor heave checks;
- Geotechnical Audits completed by Golders; and
- Examples of Weekly strata audits.

Clarence indicated that a Strata Review Team meets weekly to assess monitoring data. Actions are developed and tracked in Lotus Notes.

8.3.5 End of Year Reports

The 800 and 900 area SMP approvals include the requirement to prepare an end of year report (to be submitted within the first 3 months of the subsequent year) which includes a summary of subsidence and associated environmental monitoring for the year, analysis of these results against the relevant impact assessment criteria, identification of any trends in monitoring results, and description of any actions taken to manage potential subsidence impacts due to mining. The report incorporates all SMP areas, and the latest report is publicly available via the Centennial website. End of Year reports for each year since the last IEA in 2011 were sighted. The 2015 End of Year report was under preparation at the time of writing this report, hence was not considered as part of writing this section. The report was provided prior to finalisation of this report.

8.3.6 Subsidence Reviews

Various reports are completed to verify or calibrate modelling of subsidence at Clarence. These included:

- Golders Report: *“Review of subsidence information from partial extraction areas (2015), including implications for future equivalent operations”* dated 26 May 2015)
- Ongoing review of surface subsidence effects (survey, surface inspections, photographic records) for the Subsidence Management Status Reports and the End of Year Reports.

8.3.7 Public Safety Management Plans

Public Safety Management Plans (PSMPs) have been developed as required of the SMP Approvals. The 900 area PSMP was dated 24 February 2014 and approved on 23 April 2014 while the 800 area PSMP dated 24 January 2014 was approved on 23 April 2014.

8.3.8 Environmental Monitoring Program

Environmental Monitoring Programs (EMPs) have been developed and were approved for the 800 and 900 areas. The 800 and 900 area EMPs were dated 21 May 2014 and both were approved on 19 June 2014.

The EMPs detail environmental and heritage monitoring required to assess potential impacts. SMSRs and End of Year reports list monitoring completed for the period and provide a summary of the results of the monitoring.

9 Audit of Subsidence, Groundwater and Surface Water Impacts

9.1 Introduction

As required of Schedule 5 of the Development Consent DA504-00, the 5-yearly independent environmental audit is to include a detailed audit of the subsidence, surface water and groundwater impacts of the development, which shall

- a) *Review the monitoring data for the development*
- b) *Identify any trends in the monitoring data*
- c) *Examine the subsidence, surface water and groundwater impacts of the development*
- d) *Compare these impacts against the relevant impact assessment criteria; and, if necessary*
- e) *Recommend measures to reduce, mitigate or remediate these impacts.*

The following section of the report details the approach taken and the findings of the review. The review only deals with subsidence related impacts for the period from the last IEA by URS (2011) to 31 December 2015. The audit has only considered impacts relating to subsidence, and not surface activities which are covered in compliance assessments with the Development Consent and the EPL.

Various documents have been provided by Clarence for the audit and are referenced in this section. Key documents referenced include the following reports prepared by Clarence Colliery Pty Ltd and Golders:

- 2014 End of Year Subsidence Management Report, dated 12 March 2015
- Subsidence Management Status Report – Four Monthly Update – 1 July 2015 to 31 October 2015, dated 30 November 2015
- Review of Subsidence Information from Partial Extraction Areas (2015), Including Implications for Future Equivalent Operations; Golders, 26 May 2015.
- Subsidence monitoring results recorded in excel spreadsheet format.
- Groundwater monitoring report for August – September 2015 (Draft) by Aurecon.

The 2015 End of Year Report was made available after writing this section of the report.

MCW Environmental has not conducted any independent measurements or sought to verify data contained in the above reports or any documents referenced in this audit. MCW Environmental has relied fully on the documents, interpretations and data provided by Clarence in the conduct of this audit. The auditors are not subsidence specialists.

9.2 Subsidence

9.2.1 Impact Assessment Criteria

The key subsidence impact criteria for the partial extraction areas at Clarence are defined in the Project Approval and are also contained in Subsidence Management Plans. The key criteria are:

- Subsidence not to exceed 100mm
- Tilt not to exceed 3mm/m
- Strains not to exceed 2mm/m

As presented by URS (2011), *“these criteria are representative of very small to negligible subsidence impacts, and this needs to be kept in mind when reviewing monitoring data, as the subsidence survey provisions and techniques which are accepted good practice have generally been developed to deal*

with surface movements an order of magnitude greater than those typically expected and experienced at Clarence. With the much smaller movements at Clarence, the inherent accuracy of the survey methods is often of the same order as the actual movements, and consequently plotted data, which at first glance might suggest substantial changes in subsidence effects, may really just be showing the inherent “noise” in the monitoring methods.”

9.2.2 Subsidence Data Review, Trend Identification

Raw subsidence data detailed and plotted in excel spreadsheets were sighted for the survey areas monitored in the audit period. Comments on the monitoring and trends of key subsidence lines are provided below:

- 900 A Line (902 and 904 Panels)- Maximum subsidence measured less than 30mm;
- 903 Line Subs - Maximum subsidence measured less than 11mm;
- 800 A Line (810, 812, 814 and 816 panels)– Maximum Subsidence measured less than 10mm;
- 800 B Line (Panel 810 near National Park Boundary) - Maximum Subsidence measured less than 5mm
- 700 A Line (702, 704, 706, 708, 710, 712 Panels) – Maximum Subsidence measured less than 55 mm;
- 700 B Line (702, 704, 706, 708, 710, 712 Panels) – Maximum Subsidence measured less than 50 mm (some outliers discounted in 2013);
- 700 C Line (Power Poles) – Maximum Subsidence measured less than 90 mm (some outliers discounted);
- 700 D Line (704 and 706 Panels)- Maximum Subsidence measured less than 30 mm;
- 700 E Line - Maximum Subsidence measured less than 36 mm;
- 609 A Line (609A, 609B, 609C and 609D Panels) – Maximum subsidence measured prior to 2007 was 40mm. Subsequent monitoring showed additional settlement to a maximum of 111mm total settlement. Clarence consider the additional settlement to be related to flooding of this area since mining. This is discussed further below;
- 609 D Line (609B and 611 Panels) - Maximum subsidence measured prior to 2010 was 80mm. Subsequent monitoring showed additional settlement to a maximum of 117mm. Clarence consider the additional settlement to be related to flooding of this area since mining. This is discussed further below;
- I Line (612 Panel) - Maximum subsidence less than 100mm with results in 2010 slightly exceeding 100mm. Surveys post 2010 show less than 100mm subsidence.
- T Line (611 E Panel) – Maximum subsidence less than 45mm (with some outlier data);
- S Line (611B and 611 Panel)– Maximum subsidence less than 50mm;
- W and Z Lines (302 and 306 Panels) – Maximum subsidence less than 60mm;

The vast majority of subsidence data is within the subsidence criteria of 100mm. Subsidence measurements for the current 800 and 900 areas show settlements of less than 30mm.

Measurements for the 609 Panels show that since the underground workings in the area have been flooded, additional subsidence has occurred and in some cases has the total subsidence has exceeded 100mm. These areas were mined in 2005, prior to the current Development Consent DA 504-00, under previous subsidence requirements, hence are not considered to represent a non compliance with the current Development Consent. The data is relevant to ongoing mine design and is discussed further below.

There have been no observations during site inspections by Clarence or by the auditors of surface cracking, or of visible effects on cliff lines and pagodas. No reports of observations of subsidence damage have been made in SMSR reports or End of Year Reports.

Further to the discussion above, Golders conducted a complete review of subsidence data in their report “*Review of Subsidence Information from Partial Extraction Areas (2015), Including Implications for Future Equivalent Operations*” dated 26 May 2015.

The report provides the following summary of subsidence results:

Summary Table: Subsidence Data from Partial Extraction Panels

Panel	No. of Headings	Pillar Width (centres, m)	Representative Depth (m)	Maximum Subsidence at Panel Mid-Span (mm)		
				Prediction (Dry)	Measured	
					Pre-Flooding	Post-Flooding
332	7	30	200	15-20	22	N/A
605	7	30	230	10-20	10	N/A
609D	7	33	300	25	28	55
609C	7	33	305	25-30	22	86
609B	7	33	305	25-30	19	88
609A	7	33	260	20-25	24	45
609	7	33	305	25-30	32	110
612	7	30	240	20-25	78	95
614	6-7	30	170	15-20	37	15
611A	7	30	260	20-25	15	32
611B	7	33	270	20-25	17	37
611C	7	33	220	15-20	40	51
611D	7	30	210	15-20	48	51
611E	7	33	270	20-25	26	44
611	7	33	290	25	20	72
702 Inbye	7	30	220	20-25	40	N/A
702 Outbye	7	33	290	25-30	29	N/A
704 Inbye	5	35.5/30	235	20-25	42	N/A
704 Outbye	5	35.5/30	290	25-30	30	N/A
708 Inbye	5	35.5	230	20-25	32	N/A
708 Outbye	5	35.5	260	25-30	29	N/A
710 Inbye	3	36/25	220	20	31	N/A
710 Outbye	3	36/25	270	20-25	38	N/A
712 Inbye	5	35.5/34/32.5	215	20-25	37	N/A
712 Outbye	5	35.5/34/32.5	270	25-30	42	N/A
714 Inbye	5	35.5/34/32.5	200	20-25	40	N/A
714 Outbye	5	35.5/34/32.5	230	20-25	30	N/A
810 Panel	5	33.5/35.5/31.5	260	10-20	7	N/A
902	7	33	240	20-30	28	N/A
904	7	30	230	20-30	27	N/A
707	7	30	210	20	14	N/A
				Average	30	60
				Std. Dev.	13	28

Source: Golders (2015).

Golders made the following comments on the data (text from Golders report in italics):

i) Thirty-one representative results are available from the mid-span of twenty-four panels, with two datasets for each of the longer 700 series panels.

ii) The average subsidence following partial extraction, but prior to flooding is 30mm. This is practically identical to the equivalent result from the previous (2013) subsidence survey (i.e. 31mm). The

standard deviation of 13mm suggests that an upper bound result of the order of 50-55mm can be expected.

iii) The five heading layout results are not materially different from the seven heading panel results, at the same stage of the process (i.e. prior to flooding).

iv) The post-flooding average subsidence of 60mm is double the equivalent pre-flooding figure, which is broadly consistent with the increments generated by the analytical subsidence estimation methodology. However, the empirical and numerical methodologies both suggest increments of around 45-50% and are considered more reliable, given current panel designs and operational practices.

v) The post-flooding average subsidence of 60mm is practically identical to the equivalent result from the previous (2013) subsidence survey (i.e. 57mm).

vi) The post-flooding standard deviation of 28mm suggests that worst-case subsidence results of the order of 110-115mm are possible in the long-term for historical panels (as per 609 Panel). However, current operational and design practices will limit long-term subsidence in the current and proposed workings to significantly less than 100mm (i.e. less variation will be associated with current practices).

vii) Overall, the subsidence results and updated analysis methodologies provide significant confidence with regard to the current combined design approaches and likely future subsidence outcomes. In particular, the combined subsidence estimation methodology, using analytical, empirical and numerical models, is considered robust and good engineering practice.

viii) Periodic surface inspections, including photographic surveys, confirm the absence of any discernible subsidence-related damage above partially extracted areas.

ix) Based on measured experiences to-date and the combined subsidence model, the layouts in current use and planned for future areas are expected to result in the following subsidence outcomes:

- First workings, short and medium term: 5 to 10mm.
- First workings, long-term (worst-case): 10 to 20mm.
- After lifting, short and medium term: 15 to 35mm.
- After lifting, long-term (worst-case): 20 to 60mm.

These outcomes are consistent with previous estimates.

x) The maximum tilts are strains associated with these subsidence magnitudes are very small and well within the mine's compliance criteria.

xi) With regard to future data collection, monitoring periods of up to 10 years can be required to confirm long-term impacts and the development of an equilibrium over time (i.e. a trend to a subsidence limit). Where practicable, monitoring should cover eventual flooding.

xii) However, there is also an opportunity (and need, given the issue of "noise") to rationalise the survey frequencies, recognising the relevant phases of ground deformation and trends over time.

xiii) Finally, it is noted that the subsidence data, in combination with the other underground and surface monitoring data sets, constitutes a highly consistent body of information that confirms the favourable and generally highly predictable performance of the partial extraction system, increasing confidence with regard to future stability and related subsidence outcomes.

In specific reference to the 609 Panels Golder state "As with the 609 A and D Line results, the influence of flooding subsequent to the completion of mining is evident. This area was one of the first to be flooded, and the subsidence against time results show a clear trend towards a limit. Over the last two years, the survey results for the H and I Lines suggest no appreciable ongoing movement. Small fluctuations are attributed largely to survey resolution (i.e. noise). The trend to equilibrium is illustrated by the Peg I-33 results."

A key finding of the Golders report from the data is that areas subjected to flooding experience on average a doubling of subsidence measured. Golders note that *“The implication is that weakening of the strata in and around the workings due to saturation was primarily responsible for the increased subsidence over the last six years.”*

This effect was not measured in the data prior to the previous IEA in 2011 (URS) (due to flooding not having occurred in these areas for a significant period prior to the audit), hence was not discussed in the 2011 IEA (URS). While Golders suggest that monitoring shows that post flooding the subsidence data shows a clear trend to a limit, further data to demonstrate stabilisation over a longer term would confirm this view for a higher number of mined areas.

The recommendation (xi) made by Golders above to continue to monitor areas that are flooded is supported in that the longer the period of monitoring, the more certainty can be gained in respect of the impacts of flooding (of mine workings) on subsidence.

OFI 19 CLR IEA 2016

That monitoring of flooded areas be undertaken for as long as practicable to confirm stabilisation to a limit for mined areas impacted by flooding.

OFI 20 CLR IEA 2016

That in future subsidence reviews and modelling by independent experts, the influence of flooding of workings affecting subsidence be further investigated; particularly in respect of how these influences may impact Clarence conforming to the subsidence criteria in the long term. Future subsidence models should take into account such influences.

Tilts and Strains

For many new areas Feno markers are used which do not allow for measurement of tilts and strains. The use of Feno markers has been approved by DRE through their approval of subsidence monitoring plans.

Tilts and Strains have been measured in the 700 area monitoring; specifically 700 A, 700B monitoring lines. Tilts where measured have been consistently below the acceptance criteria. Golders (2015) report that maximum tilts were measured at 0.3 mm/m and 0.2 mm/m for the 700 A and 700 B lines respectively. This compares to criteria of 1 mm/m for first workings and 3.0 mm/m for Partial Extraction.

Raw data for strains in the 700 A and 700 B lines were noted to have been affected by reversals in strain across a number of pegs, indicating pegs have been moved and affect the data. One data point was noted as having a strain of 2.6mm. Golders discussed this point as follows:

“The 700A Line results are similar, with an average strain of 0.4mm/m and a standard deviation of 0.5mm/m. However, the maximum strain value of 2.6mm/m, at Peg A64, is higher. This value is almost certainly not erroneous, as it is not associated with a neighbouring “reversal”. Peg A64 is located above the 704 Panel lifted area and in close proximity to a small fault mapped underground. It is therefore concluded that (albeit very rarely) increased strain magnitudes can be associated with discrete movements at major structures following lifting. Notwithstanding the relatively high strain value recorded at Peg A64, no cracking or other discernible surface damage was evident from a previous surface inspection of the 700A Line (N. Campbell, D. Hill and E. White, 15th of June 2010). Also, the strain value at this location has not changed materially over the last four years.”

Golders (2015) reviewed the strain data and noted the following: *“The erroneous pairs of values due to knocked pegs referred to previously are identifiable from scrutiny of the subsidence data. Rather than attempt to exclude all suspect data points, it is simpler to assess the outcomes with further statistical analysis. The conventional approach at Clarence has been to average the strain and tilt results over several pegs, thereby minimising the impact of reversal errors. Applying a three point moving average to the 700 data results in the tilt and strain maxima summarised in Table 8.”*

Table 8: Tilt and Strain Maxima, Based on 3-Point Moving Averages

Subsidence Monitoring Line	Maximum Strain (mm/m)	Maximum Tilt (mm/m)
700A	1.5(t)	0.3
700B	1.8(t)	0.2

Source: Golders (2015).

These values (based on the methodology and data presented by Golders) are less than the Development Consent criteria of 1mm/m (first workings) and 2mm/m (Partial Extraction).

9.2.3 Subsidence Impacts

The survey monitoring results, photographic records, auditor inspections, quarterly inspections, Subsidence Management Status Reports and general surface observations on the Newnes Plateau all support the assessments made by Clarence Colliery, that to date the surface impacts of subsidence due to the partial extraction operations have been negligible.

9.3 Groundwater

9.3.1 Impact Assessment Criteria

The key groundwater impact criteria for the partial extraction areas at Clarence (as based on Development Consent Condition 5, Schedule 3) are:

- No significant inflows to mine workings
- No reduction in pumping yields in privately-owned groundwater bores
- No reduction in surface flows and groundwater baseflow to upland swamps and wetlands
- No reduction in flows and groundwater baseflow to waterbodies (excluding reduction in flows associated with the water transfer scheme)

9.3.2 Background and Changes since 2010 IEA

The previous IEA (URS 2011) noted the following:

“Comprehensive studies by several different Consultants over the life of Clarence Colliery to date have all concluded that the aquifers which affect groundwater bores in Clarence village and its surroundings (the only private groundwater bores in the area), and which provide base flow to swamps and major watercourses in the area, are all within the upper major rock stratum, the Banks Wall Sandstone (110 to 250m thick), with the relatively thin Mount York Claystone which underlies it forming an aquiclude that prevents groundwater travelling between the overlying stratum and the underlying strata, which include the Katoomba Coal Seam.

Consequently, the key element of the groundwater monitoring program is the measurement of piezometric head at various levels within the Banks Wall Sandstone, and assessing whether there is any causal relationship between changes in piezometric conditions and underground mining activities.”

This situation described remains relevant for this current IEA. Further description of groundwater behaviour and monitoring is presented in the Clarence Colliery Water Management Plan (WMP- document MP 2041 dated 16 February 2015). Key changes to water management and monitoring since the previous IEA detailed in the WMP include:

- Mining has ceased in the north east areas and these areas were allowed to flood. This led to a reduction in pumping rates in 2010 and 2011 until March 2012, when water reached a pre-determined level within the mine and dewatering resumed to prevent ingress to the eastern areas of ML1583;

- In 2011, Clarence Colliery commissioned GHD to characterise groundwater inflow to the mine under existing and future conditions. The investigation included the development of a numerical groundwater model to assess the potential inflow into the mine. The results of the study were to be used as a planning tool for future water management strategies.
- During 2012, flow meters and level transmitters were installed in all major underground pumping areas. Collection of this data has allowed Clarence to review and calibrate existing groundwater models completed at Clarence Colliery. The groundwater model completed by Coffey (1993) was found to be the most accurate when calibrated against known pumping and recharge data collected.
- Shallow swamp piezometers were installed in two swamps - Happy Valley Swamp (a NPSS) and Happy Valley Swamp Upper (a NPHS) (Water Monitoring Sites Plan). These swamps were selected as representative swamps to measure the performance of the mining system. No mining related impacts were observed in these piezometers after partial extraction occurred. These piezometers were destroyed during the October 2013 bushfires. These piezometers will not be replaced.
- Addition groundwater monitoring points have been established and are outlined in the next section.

9.3.3 Groundwater Monitoring Locations

Groundwater conditions above the partial extraction areas at Clarence Colliery are monitored via piezometer-equipped boreholes. The 2014 End of Year report (Table 2) provides details of groundwater monitoring locations.

Table 2. Groundwater Piezometers at Clarence

Piezometer	Installed	Area
CLRP1	2004	Eastern Area SMP, within 330 Area
CLRP2	2004	Eastern Area SMP, above 611E panel
CLRP3	2008	Eastern Area SMP, above 612 panel
CLRP4	2008	South of mining areas
CLRP5	2008	700 Area SMP, north of 700 area panels
CLRP6	2008	700 Area SMP, above 702/704 panels
CLRP7	2008	700 Area SMP, south of 700 area panels
CLRP10	2008	700 Area SMP, above 706 panel
CC113	2008	700 Area SMP, south of 700 area panels
CLRP8	Existing bore	Clarence Township. Piezo installed 2009
CC114	2009	800 Area SMP Application Area
CC115	2009	800 Area SMP Application Area
HV1	2009	Happy Valley Swamp (700 Area SMP)
HV2	2009	Happy Valley Swamp (700 Area SMP)
HVU1	2009	Happy Valley Upper Swamp (700 Area SMP)
HVU2	2009	Happy Valley Upper Swamp (700 Area SMP)
CLRP11	2010	700 West SMP Application Area
CLRP12	2010	700 West SMP Application Area
CLRP13	2010	800 Area SMP Application Area
CLRP14	2011	800 Area SMP Application Area
CLRP15	2011	Lithgow No.2 Dam
CLRP16	2011	Lithgow No.2 Dam
CLRP17	2013	800 Area SMP Application Area
CLRP18	2014	900 Area SMP Application Area
CLRP19	2013	800 Area SMP Application Area
CLRP22	2014	900 Area SMP Application Area

Text describing the location and basis for establishment of each monitoring point as described in the report is as follows:

In August 2004, nested piezometer sites CLRP1 and CLRP2 were installed as baseline monitoring for the Eastern Area SMP. CLRP3 was then installed as an additional site in January 2006. CLRP1, CLRP2 and CLRP3 have been used to measure background groundwater levels and the subsequent impact from mining over a number of years.

CLRP4, CLRP5 CLRP6 CLRP7 CLRP10 and CC113 were installed to measure any potential impact from mining within the 700 Area. The first panel in the 700 Area (702 panel) completed extraction in early December 2009.

CLRP8 was an existing borehole located in the Clarence Township. Clarence Colliery installed a piezometer in the bore to measure potential impacts on the water supply for the Clarence village.

CC114 and CC115 were installed to collect background data for the 700 West/800 Area SMP application. These piezometers have not been undermined, but do provide data with the potential to detect groundwater related impacts beyond the mining area.

Shallow piezometers were installed in Happy Valley Swamp (HV1 and HV2) and Happy Valley Upper Swamp (HVU1 and HVU2) in December 2009. The two piezometers in each Swamp directly measured any impact on groundwater baseflows from undermining each swamp. Unfortunately, these piezometers were destroyed by the 2013 bushfires.

CLRP11, CLRP12 and CLRP13 were installed to collect further baseline data for the 700 West/800 Area SMP Application. Again, these piezometers have not been undermined, but do provide data with the potential to detect groundwater related impacts beyond the mining area.

CLRP15 and CLRP16 are located either side of the Lithgow No.2 Dam and are used to monitor potential impact on the dam from mining within the Dam Notification Area. It is noted that mining activities within the Lithgow No.2 Dam Notification Area ceased in late September 2013 with the completion of extraction of the 716 Panel.

CLRP17 and CLRP19 were installed to collect background data for the 800 Area SMP application in 2013. These piezometers have not been undermined, but do provide data with the potential to detect groundwater related impacts beyond the mining area.

CLRP22 and CLRP18 were installed to collect background data for the 900 Area SMP application in December 2014. These piezometers have only recently been installed and will collect baseline data until the piezometers are subject to underground development and partial extraction.

Aurecon download data from the piezometers on a two monthly basis and provide reports to Clarence detailing groundwater monitoring results.

9.3.4 Impacts to Groundwater Monitoring Equipment

The most recent (Draft) Aurecon Report (September 2015) details the status of equipment and summarises impacts to monitoring equipment from the 2013 fires. The Aurecon discussion is provided below:

- *The State Mine bushfire burnt through the lease area on 18 October 2013, and affected all the swamp piezo installations in Happy Valley and Upper Happy Valley Swamps. In each case, the instrument, installed at depth in the hole and sitting in a groundwater pool in the borehole, was not affected, and it was possible to download data from the instrument. However, the PVC casing at all of the holes was affected to some extent, with variable effects on the level of the instrument. Some instruments had been recovered and returned to the Clarence pit top soon after the fire, and some were still in the bores at the time of the November 2013 data download. All were returned to the pit top.*
- *The bushfire did not have any significant effect on the aquifer boreholes.*

- Some multilevel installations were damaged by the bushfire: CC115, CLRP11, CLRP13, and CLRP14. CLRP13 was repaired previously. CLRP14 and CC115 were repaired on 23 March 2014, including an upgrade of the data logger type to Campbell Scientific CR800 units.
- It is notable that all absolute pressure values in CLRP14 and CC115 are lower than before the installation of the new data logger, by up to approximately 50 m of head. The magnitude of the differences is too large to be real groundwater effects. In comparison, CLRP11, which was damaged by bushfire and repaired without installation of a new data logger, shows no offset in the limited data available. These observations suggest that the offsets are likely to be a result of calibration differences between the old and new data loggers. This should be reviewed by the data logger installers.
- Data loggers at CLRP11, CLRP12, CLRP13, and CLRP15, were serviced during February and March. The data logger at CLRP14 was serviced early June 2015, but is still not recording data. The data loggers at CLRP6 and CLRP14 still need attention.
- The data logger at CLRP1 retained no data for most of the period. This has always been one of the most reliable installations in the array. A flat battery is suspected. The instrument should be serviced.
- The data loggers at CLRP18 and CLRP22 were reprogrammed to take daily readings. At CLRP18, this coincides with an apparent pressure drop of up to 19 m, which is unrealistic. The program needs to be reviewed.

During the audit site inspections, photos were sighted of the damage caused to groundwater monitoring equipment during the 2013 fire. Clarence have replaced and repaired the equipment where possible; however work is still required in some areas, as noted by Aurecon, to re-establish effective data recording in some locations.

OFI 21 CLR IEA 2016

Continue to implement recommendations made by Aurecon to repair and reinstate damaged equipment such as by the fires to maintain an adequate array of monitoring equipment.

9.3.5 Data Review and Trend Identification

The most recent groundwater monitoring data available for this review was contained in:

- End of Year Report for 2014;
- Subsidence Management Status Report 1 July 2015 to 31 October 2015, dated 30 November 2015; and
- Groundwater monitoring report for August – September 2015 (Draft) by Aurecon.

The documents plot piezometer data since installation to the period of reporting. Results are mostly plotted as change in piezometric level against time, which allows relatively small changes in piezometric level to be shown. The plots are reproduced in figures for the key groundwater monitoring installations as listed above.

The Draft Aurecon Report (September 2015) provides the following summaries for different types of groundwater monitoring.

Swamp Groundwater Monitoring	<p>Happy Valley Swamps</p> <p>There are no new data from HUV1 and HUV2, as they were destroyed by the State Mine bushfire.</p> <p>The behaviour shown up until that time was typical of a periodically waterlogged swamp in the upper part, and a permanently waterlogged swamp in the lower part.</p> <p>Clarence Swamp</p> <p>CS1, located in the lower part of Clarence Swamp, continued to show a shallow, constant groundwater level, with small but distinct impacts related to significant rainfall (figures 2, 3). Groundwater at this site is strongly influenced by the adjacent pool, where Clarence swamp is ponded by the berm surrounding the Clarence ROM pad.</p> <p>MW05, located on a berm surrounding the ROM pad, and immediately adjacent to CS1, generally shows a broadly similar flat groundwater level trend, at approximately the same elevation, as CS1 (figures 2, 3). Small impacts are related to rainfall during the period. In detail, the groundwater level showed a minor decline during the period, due to the very dry weather conditions.</p> <p>Hanson Swamp</p> <p>Piezometers in and adjacent to Hanson Swamp are part of the monitoring program for a planned reject emplacement area using the adjacent Hanson sand pit voids. Monitoring has enabled baseline data to be collected for this area. Although the data record is short, there is no sign of mining impact discernible in the groundwater record. The presence of shallow groundwater in HS1 and HS2 clearly indicate that there is no direct permeability connection between the swamp and the workings.</p>
Clarence monitoring	<p>Aquifer</p> <p>In general, the piezometers continued the broadly level trends they have showed over time. Piezometers in the south, including CLRP8 and CLRP7, showed a flattening of the rising trend that had occurred after heavy rainfall in mid-April. With the recent dry weather, this observation remains consistent with the previous conclusion that rainfall directly recharges the Clarence Aquifer in the southern area, where the Clarence Aquifer crops out, or is very close to surface.</p> <p>Groundwater levels in all of these holes stand at or near historically high levels in the data record extending back to 2008, related to the generally wetter conditions between late 2010 and early 2013.</p> <p>Minor noisy data and distinct small negative spikes in the record for CLRP8, in Clarence village, appear to be related to localised pumping of groundwater for domestic use. CLRP7 shows sporadic spikes related to groundwater sampling, including at the end of the current period.</p> <p>There is no evidence of any mining-related impacts on any of these piezometers, based on the continuing uniform responses of the piezometers.</p>

Multi-level piezometers	<p>The Draft Aurecon Report (September 2015) report provides a detailed discussion of the data for each of the piezometers. For some piezometers gaps exist in the data or data has been affected such as from fires in 2013, as described in Section 8.3.4.</p> <p>The report notes that in general, previously observed trends continued, with no significant changes. Some large changes appear to be due to instrumental problems. Some minor reduction in pressure has been observed in piezometers installed just above the working horizon in 800 area, as expected, but there is no observable impact on piezometers in the near surface aquifer.</p> <p>The report summarises that no significant mining impacts were observed.</p>
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Overall, there are no obvious trends in the groundwater monitoring data for piezometers above the Mount York claystone which appear to be potentially mining-related. The Draft Aurecon Report (September 2015) report as detailed above indicates that the piezometers above the Mount York Claystone respond to rainfall conditions. We consider that this is a realistic interpretation of the available data.

9.3.6 Subsidence Impacts on Groundwater

Private groundwater bores in the area are located within the Banks Wall Sandstone, and the aquifers which contribute base flow to the Newnes Plateau swamps are in the Banks Wall Sandstone.

Based on recent assessments such as the Draft Aurecon Report (September 2015), the groundwater piezometric monitoring has not revealed any adverse impact on the aquifers in the Banks Wall Sandstone which can be attributed to or correlated with the mining being carried out by Clarence Colliery.

As would be expected and was predicted, the piezometric monitoring has confirmed that mining of the Katoomba Seam in their vicinity can and has resulted in a rapid loss of piezometric head due to drainage into the workings. No groundwater bores draw from this stratum, hence there is no impact on bore pumping yields.

In the earlier history of Clarence Colliery there was longwall mining and associated subsidence-related impacts. As noted previously the present audit has only dealt with the period post the 2010 IEA and not contemplated the impacts of the longwall mining.

9.4 Subsidence Impacts on Surface Water

The key subsidence-related surface water impact criteria as indicated in the Development Consent for the partial extraction areas at Clarence are:

- No reduction in surface flows and groundwater baseflow to upland swamps and wetlands
- No reduction in flows and groundwater baseflow to waterbodies (excluding reduction in flows associated with the pumping of mine water to the surface)

Section 3 above discusses Swamp Groundwater Monitoring (piezometric monitoring) conducted for swamps. This monitoring of the shallow aquifers which provide their base flows most readily identifies the potential impacts of subsidence on surface water and swamp hydrology.

It is noted that the swamp groundwater monitoring stopped with the 2013 fires and Clarence do not have any plans to reinstate the monitoring. Clarence reported that the piezometers were removed from the WMP when it was revised in 2014 and that they received advice from DP&E they were satisfied monitoring could be stopped (not sighted by auditors). The revised WMP without the piezometers was approved in 2015.

Given the swamp monitoring in this location has ceased, and no additional swamp monitoring has been initiated for the 800 and 900 areas, there is a potential that current monitoring of swamps is perceived as minimal and not providing adequate information for Clarence to demonstrate there is no impact to the swamps from mining. For example, the Paddy's East Swamp is a large, reasonably known and accessible swamp located near the 900 area and is there is no groundwater monitoring undertaken there.

OFI 22 CLR IEA 2016

It is recommended that groundwater monitoring be conducted for suitable swamp(s) such as the Paddy's East Swamp to provide Clarence with information to inform third parties that monitoring is adequate with suitable coverage; and that no groundwater impacts from recent mining are occurring in selected swamps.

The EIS and Development criteria have been developed so as to minimise impacts related to subsidence. Therefore, potential changes in surface flow due to ground level changes caused by mine subsidence would be negligible unless the surface settlements greatly exceed the nominated 100mm criterion for Clarence. Subsidence data detailed above in the section shows subsidence to date has been typically less than 100mm, with much of the data well below this level, and based on these subsidence levels there would have been no or negligible impact on surface water flows.

The above would also apply to potential changes in surface flow due to subsidence-related cracking. This would be negligible unless the surface strains greatly exceed the nominated 2mm/m criterion for Clarence.

The above sections have indicated that:

- Strains to date have been generally less than 2mm/m,
- There has been no surface cracking observed during inspections and monitoring activities.

Given the above, there has been no identified cracking-related impact on surface water flows.

9.5 Conclusions

The monitoring data relating to subsidence, groundwater and surface water has been reviewed for the period October 2010 to October 2015.

This review supports the assessments by Clarence and its various Consultants that subsidence-related impacts of the partial extraction undertaken under the current approval are minimal, and are within the impact assessment criteria nominated for the development.

Recommendations relating to monitoring have been included in the text and are summarised in Section 10.

10 Summary of Non Compliances and Recommendations

Some non-compliances have been identified with the Development Consent Conditions, EPL conditions CCL Conditions and ML Conditions. These non-compliances as well as the requirements assessed as indeterminate and the associated recommendations have been consolidated and are summarised in **Table 10-1** below. For the full condition (and it's assessment of compliance) refer to **Appendix A**.

For a number of requirements that were assessed as compliant, Opportunities for Improvement (OFIs) were identified to improve compliance. OFIs were also provided relating to observations of general environmental management, the adequacy of the various plans / programs. These OFIs are summarised in **Table 10-2**.

Table 10-1 Non-Compliant and Not Verified Conditions

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S2- 1	The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	<p>The site maintains a hierarchy of environmental controls which are detailed under individual items throughout this appendix and in the main report.</p> <p>On the 2 July 2015 Clarence recorded an incident where coal materials were released from Reject Emplacement Area (REA) III, through native forests and into the Wollangambe River. This incident was reported to the EPA and other relevant authorities as causing or threatening to cause material harm to the environment and other relevant authorities. The EPA issued two Clean Up Notices, one on the 3 July 2015 and the other on the 18 August 2015. At the time of the audit site inspection clean up and remediation works were continuing and court proceedings were pending. This incident is discussed further in the main section of the report.</p> <p>On the basis of this incident which caused harm to the environment, this condition has been assessed as non-compliant.</p>	Non-compliant
DA 504-00 Development Consent	S2- 2	The Applicant shall carry out the development generally in accordance with the: (a) DA 504/00; (b) EIS title Clarence Colliery - Lease Extension Environmental Impact Statement, dated October 2000; (c) Supplementary Report titled Variation to Development Application no.504-00 and Supplementary Information, dated May 2005; (d) EA Mod 2 (e) EA Mod 3 (f) Statement of Commitments; and (g) Conditions of this consent.	<p>A detailed review of the EIS and Supplementary Report was not conducted as part of this audit.</p> <p>During the audit period two Modifications (MODs) to DA504-00 were granted MOD 2 related to the establishment of REA VI and MOD 3 related to the haulage of coal by road to the west of the Blue Mountains through Lithgow.</p> <p>At the time of the audit, REA VI had been constructed and was being used for reject emplacement in accordance with MOD 2. Clarence was yet to commence trucking coal to the west as permitted by MOD 3.</p> <p>Compliance against individual provisions of Development Consent DA 504-00 and the Statement of Commitments have been assessed with commentary provided against specific items as detailed below.</p> <p>A number of non-compliances with Development Consent DA 504-00 were identified during the audit (refer remainder of report). It is also possible that the operation of REA III at the time of the July 2015 incident may not have been carried out in accordance with DA 504/00 or the EIS.</p> <p>On the basis of the non-compliances with the Development Consent and this condition has been assessed as non-compliant.</p>	Non-compliant See other Conditions in this report
DA 504-00 Development Consent	S2- 11	The Applicant shall ensure that all plant and equipment at the site, or used in connection with the development, are: (a) maintained in a proper and efficient condition; and (b) operated in as proper and efficient manager.	Refer to EPL Condition O2.1.	Non-compliant Refer to recommendations provided under O2.1.
DA 504-00 Development Consent	S3- 3	Pollution of Waters Except as may be expressly provided by an Environment Protection Licence, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997 during the carrying out of the development.	<p>Section 120 of the POEO Act relates to the prohibition of pollution of waters, and provides:</p> <p>(1) A person who pollutes any waters is guilty of an offence.</p> <p>(2) In this section: "pollute" waters includes cause or permit any waters to be polluted</p> <p>The auditors interpret this provision to include any significant incidents as well as non-compliance with EPL discharge limits.</p> <p>On the 2 July 2015 Clarence recorded an incident where coal materials were released from Reject Emplacement Area (REA) III, through native forests and into the Wollangambe River. This incident is discussed further in the Main Report.</p> <p>In addition a number of non-compliances with the site's EPL have occurred, as described under EPL L2 below.</p> <p>On the basis of the July 2015 incident this condition has been assessed as non-compliant.</p>	Non-Compliant Refer Main report and EPL L2.4 below
DA 504-00 Development Consent	S3- 6A	The Applicant shall prepare and implement a revised Water Management Plan for the development, taking into account the construction of Reject Emplacement Area VI and protection of the adjacent Newnes Plateau Hanging Swamp (see Appendix 5), and the relocation of the effluent irrigation area, to the satisfaction of the Secretary. This plan must be prepared in consultation with Council, SCA, EPA and NOW, and be submitted to the Secretary for approval by 31 October 2014.	The Water Management Plan (WMP) was revised and provided to Council, DPI, DTIRIS, EPA, NOW, LCC, OEH and SCC for consultation by letter dated 30.09.14. No comments were reportedly received from these agencies. The DPE provided comments which were incorporated into the Plan and it was resubmitted for approval on the 4.02.14. The WMP was approved by the Secretary by letter dated 16.02.15. A number of changes to water flows (as summarised in the Clarence Water Schematic within the WMP) had occurred since the plan was last revised.	Compliant (preparation)

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
			<p>Implementation</p> <p>Commitments articulated in the endorsed WMP include:</p> <ul style="list-style-type: none"> - Site surface water management arrangements, including separation of clean and dirty water, sediment control structures and treatment - Site groundwater management arrangements, including extraction, dewatering and treatment - Implementation of surface water and groundwater monitoring as described in the separate Environmental Monitoring Program - Meteorological monitoring - Reporting of monitoring results through the AEMR (as per DA 504-00 S5-5) - Audit and review <p>Commitments of the revised WMP appear to have been generally implemented. The following exceptions are noted:</p> <ul style="list-style-type: none"> - the belt press was not being used to treat fines resulting in coal fines being temporarily stored in the REA III holding cell. Following the incident in July 2015 this practice had ceased and the use of the belt press re-instated in early 2016. - the grit trap was not adequately designed to capture and treat water from the vehicle washdown bay resulting in it not operating effectively. - WTP residues were observed collecting on the surface f Leachate Dam 1 and required removal. Clarence noted these materials used to go to REA III and were rapidly redirected as a result of the EPA Notice to stop works in REA III. The management and disposal of WTP sludge is an ongoing challenge for Clarence. - sand had been deposited and collected behind the silt fence below Leachate Dam 2 and also in drainage structures below REA IV. - the Water Strategy Group which was started in 2009 and includes cross-functional site representatives and external stakeholders with the purpose of identifying long term water management improvements was reported to still be active but had not met since May 2015. <p>During the previous IEA it was reported that Clarence had implemented the following improvement:</p> <ul style="list-style-type: none"> - Diversion of Polishing Lagoon water to a leachate borehole releasing only water treatment plant water through LDP002. <p>During this audit period the site reverted back to releasing the Polishing Lagoon water directly through LDP002. This water was diluted with the much larger volume of treated water from the Water Treatment plant (WTP) ensuring discharge limits were met. Whilst there were minimal exceedances of discharge limits from LDP002 (refer EPL Condition L2.1), this is not considered best practice as the water from the Polishing Lagoon has the potential to be polluted as it receives overflow from the Primary Arrestor which in turn receives all the dirty water from the CHPP and coal stockpiles. Post audit site inspection, it was reported that Clarence plans to direct the polishing lagoon water into the WTP and that this project has commenced with implementation likely in Quarter 3 of 2016.</p> <p>On the basis that coal fines were not being managed as described in the WMP during the audit period, this condition has been assessed as non-compliant.</p> <p>It is noted that Clarence has engaged a consultant to undertake an independent review of onsite surface water management. The Draft report was completed outside of the audit period and as such was only briefly reviewed by the auditors. A comprehensive independent review of the report was not conducted, however the auditors generally support the implementation of the recommendations for improvement made.</p>	<p>Non-compliant (Implementation)</p> <p>REC 01 CLR IEA 2016 Implement measures to reduce the risk of pollution / licence exceedances from the Polishing Lagoon. (Post audit site inspection, it was reported that Clarence plans to direct the polishing lagoon water into the WTP and that this project had commenced with implementation likely in Quarter 3 of 2016).</p> <p>REC 02 CLR IEA 2016 Implement at source water pollution controls at the pit top where practicable.</p> <p>REC 03 CLR IEA 2016 Review the design of the grit trap and implement changes to better manage and treat dirty water generated in this area.</p> <p>REC 04 CLR IEA 2016 Investigate options for the long term management and disposal of WTP sludge.</p> <p>REC 05 CLR IEA 2016 Maintain sediment controls and stabilise areas of erosion in the area below Leachate Dam 2 and below REA IV.</p> <p>REC 06 CLR IEA 2016 Revise the WMP to reflect actual on-site water flows and management (e.g. the Clarence Water Schematic) and to reflect findings and responses to the recent assessment of water management at Clarence.</p> <p>REC 07 CLR IEA 2016 Further assess and implement recommendations of the independent review of Clarence's surface water management.</p>
DA 504-00 Development Consent	S3- 6B	<p>The Applicant shall design, construct and operate Reject Emplacement Areas V and VI to ensure that:</p> <p>(a) its commitments in Appendix 3 are implemented;</p> <p>(b) the base of the emplacement is suitably lined to comply with a permeability standard of less than 1x10⁻⁹ metres per second over a minimum thickness of 0.5 metres, or equivalent performance; and</p> <p>(c) there are no discharges from the emplacement to surface waters.</p>	<p>REA VI was designed, constructed and operated during the audit period.</p> <p>REA V was yet to be constructed at the time of audit.</p> <p>a) Refer to separate assessment of compliance with Statement of Commitments (SoC) below.</p> <p>b) The base of REA VI was lined with a low permeability clay liner and covered with compacted reject material. The Section 100 documentation (application for the approval of opening a reject emplacement from the DRE), specified that the coarse reject should be compacted to 98% Maximum Dry Density. Aurecon were engaged to conduct a geotechnical investigation to verify the level of compaction achieved within the stockpile. The report concluded that a high level of compaction was achieved. It is noted this report did not specifically look at whether the permeability standards specified by this Condition were being achieved.</p> <p>c) run off from REA VI was directed to Leachate Dam 3.</p>	<p>Not verified</p> <p>REC 08 CLR IEA 2016 Obtain evidence that the base of REA VI achieved the specified permeability standards.</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 16A	The Applicant shall prepare and implement a revised Noise Management Plan for the development, with a particular focus on reducing rail noise, to the satisfaction of the Secretary. This plan must be prepared in consultation with EPA, provide for the implementation of the Applicant's commitments in Appendix 4, and be submitted to the Secretary for approval by 31 October 2014.	The Noise Management Plan was revised and submitted to DPE and EPA by letter dated 30.10.14. An email was received from the DPE dated 4.02.15 requesting the NMP be further revised to address a number of issues. New noise modelling was conducted in 2015 to inform the noise impact assessment for the operation of REA V in rail loop. It was reported that this noise impact assessment was in the process of being finalised at the time of the audit. Once finalised it was reported that it will input into the new Noise Management Plan for the western region which will replace Clarence Noise Management Plan: Western Region. The Draft Noise Management Plan Western Region (January 2016) was sighted by the auditors and noted to include Appendix C which was specific to Clarence Colliery. On the basis that the revised Noise Management Plan has not been approved and the timeframes have not been met, this condition was assessed as non-compliant. It is noted that the Draft Noise Management Plan Western Region (January 2016) was submitted to the DPE post audit site inspection on the 11.02.16 and that approval of this Plan would meet this requirement.	Administrative non-compliance (preparation)
DA 504-00 Development Consent	S3- 20	Visual Impact The Applicant shall minimise the visual impacts of the development to the satisfaction of the Secretary.	The topographic setting of the development serves to minimise visual impact when viewed from off-site locations. All structures and buildings were observed by the auditors to be constructed of non-reflective materials in green/brown tones. Reject emplacement areas (REA) are key landscape features within the site. The following REAs were observed during the audit site inspection: - REA III: No works were being undertaken following the July 2015 incident (refer to main report). The REA III is large and has some light coloured spoil (placed for future rehabilitation) on top of a dark coal reject base, hence has a high visual impact. No attempts have been made to rehabilitate REA III to reduce the visual impact of REA III. - REA VI: was being used for reject emplacement during the audit. It was reported it would be progressively rehabilitated. Some weeds were observed in the bund wall. - REA IV: Staged rehabilitation commenced in 2014. For REA IV_A topsoil from REA VI was used as a groundcover and this was seeded with native plants. During the audit site inspection a number of weeds were observed within this area. By contrast, REA IV had no topsoil placed on it and it was directly planted with tube stock and minimal weeds were observed in this area although additional planting may be required. Some drainage works were also required in this area. - REA V was approved but was yet to be constructed - REA I and REA II were rehabilitated in the 1990's. The height of emplacement areas is dictated by the High Risk Activity (HRA) application to the mines department and the EIS. The 1993 EIS proposes the final landform elevation of REA IV to be 1074 m (Figure 2.9, page 52). An email from the Mine Surveyor providing final survey heights (dated 08.03.16) indicated the final height of REA IV was 1073m. Given the high visual impacts of REA III and that the rehabilitation of REA III has been delayed through use of the area for coal fines management, this condition is considered as Non-compliant.	Non-compliant REC 09 CLR IEA 2016 Reshape and rehabilitate REA III promptly and effectively with local native vegetation (and in accordance with an approved rehabilitation plan). REC 10 CLR IEA 2016 Undertake improvement works in REA IV including weed control, additional groundcover planting and drainage works. These works should be directed by suitably qualified experts in rehabilitation.
DA 504-00 Development Consent	S3- 22	All external lighting associated with the development shall comply with Australian Standard AS4282 (INT) 1995 Control of Obtrusive Effects of Outdoor Lighting.	During the previous IEA it was reported that site commissioned an external compliance assessment which determined that external luminaries at the site do not appear to be having an obtrusive effect pursuant to AS4282. During the audit period additional lighting was installed at REA VI. It could not be determined whether this lighting complies with AS4282. No complaints were received during the audit period relating to lighting emissions.	Not verified REC 11 CLR IEA 2016 Undertake a compliance assessment of the new lighting installed at REA VI with AS4282.
DA 504-00 Development Consent	S3- 23	Greenhouse Gas The Applicant shall: (a) monitor the greenhouse gas emissions generated by the development; (b) investigate ways to reduce greenhouse gas emissions on site; and (c) report on these investigations in the AMER, to the satisfaction of the Secretary.	a) Greenhouse gas emissions are tracked across the Centennial business, including Clarence Colliery, by the corporate head office. This includes energy consumed (electricity, diesel, oil and grease used), electricity produced (coal extracted). From these the Scope 1 and 2 emissions are calculated for reporting under the National Greenhouse Gas and Energy Reporting (NGER) scheme. The monthly greenhouse gas data is provided to the sites for collation and use in their AEMRs (sighted report for January 2015 which included data from July 2014 and year to date totals). b) Centennial Coal has a Climate Change Response Policy (April 2012, available on Centennial website) and sets targets to reduce greenhouse gas emissions at the corporate level. The 'Centennial a Year in Review 2014' publication reported fugitive emissions of methane accounted for 67% of greenhouse gas emissions during 2014, compared to 77% in 2013. Centennial participated in the Federal Government's Energy Efficiency Opportunities (EEO) program which concluded in 2014. Centennial reported that it would continue with the development of a framework based on the EEO process for identifying and assessing energy improvements. The EEO Public Report 2013 reported that the next assessment for Clarence Colliery is scheduled for the first half of 2015 and that a workshop involving relevant site personnel and group sustainability personnel will be held to: - Discuss the status and outcomes of opportunities already included in previous reports. - Identify projects that are to be carried forward due to potential for practical application. - Identify additional opportunities and ideas for energy savings. A workshop was not held in 2015. c) A review of the 2014 AEMR found that whilst the AEMR reports on greenhouse gas emissions and includes historical data, it does not discuss investigations to reduce greenhouse gas emissions.	Not verified REC 12 CLR IEA 2016 Investigate ways to reduce greenhouse emissions and report on these in the AEMR

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 30	Heritage Management Plan The Applicant shall prepare and implement a Heritage Management Plan for the development to the satisfaction of the Secretary. This Plan must: (d) be prepared in consultation with relevant Aboriginal stakeholders; (e) be submitted to the Secretary for approval prior to 31 October 2014; (f) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site; (g) detail the responsibilities of all stakeholders; and (h) include programs/procedures and management measures for appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site.	Centennial developed a Western Region Aboriginal Cultural Heritage Management Plan (ACHMP) which includes Clarence Colliery. The Plan was prepared in consultation with Aboriginal stakeholders as detailed in Section 1.3 of the Plan (evidence of letters to attend inception meeting and provision of Draft Plan for comment were sighted) and the OEH (comments received on the 29.09.14). The ACHMP was submitted to the DPE on the 2.10.14 and approved by letter dated 23.10.14. The Western Region ACHMP (as reviewed by the auditors) generally addresses the requirements (f), (g) and (h) relating to Aboriginal heritage however non-Aboriginal heritage is not considered in the Plan. It was reported that Centennial was in the process of developing a Regional European Heritage Plan however at the time of the audit this had not been finalised. On the basis that non-Aboriginal heritage is not covered by any management plans this condition has been assessed as non-compliant.	Non-compliant (non-Aboriginal)
DA 504-00 Development Consent	S5- 1	Environmental Management Strategy Within 12 months of the date of this consent, the Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (a) provide the strategic context for environmental management of the development; (b) identify the statutory requirements that apply to the development; (c) describe in general how the environmental performance of the development would be monitored and managed during the development; (d) describe the procedures that would be implemented to: - keep the local community and relevant agencies informed about the operation and environmental performance of the development; - receive, handle, respond to, and record complaints; - resolve any disputes that may arise during the course of the development; - respond to any non-compliance; - manage cumulative impacts; and - respond to emergencies; and (e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development; and (f) be updated within 3 months of the completion of each Independent Environmental Audit.	Development and Approval The original Environmental Management Strategy (CL-EWP-P-010 Rev0) was developed and approved by the DPE during the previous audit period (URS, 2011 IEA sighted evidence of approval). The EMS was last revised in 2014. The revised Strategy was not submitted to the DPE for approval or for their information and on this basis this condition has been assessed as non-compliant. The revised Strategy generally includes the required items (as applicable). Refer also to the main report for an assessment of the adequacy of the Strategy.	Administrative non-compliance (preparation) REC 13 CLR IEA 2016 Revise the Strategy following completion of this IEA and submit it to the DPE for approval.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S5- 5A	The Applicant shall immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	<p>The Development Consent defines an Incident as a set of circumstances that:</p> <ul style="list-style-type: none"> - causes or threaten to cause material harm to the environment; and/or - breaches or exceeds the limits or performance measures / criteria in this consent. <p>The following incidents causing or threatening material harm occurred during the audit period:</p> <ol style="list-style-type: none"> 1. 2 July 2015::release of coal rejects and fines into Wollangambe River. Reported to DPE by email dated 03.07.15. A formal report was not provided to the DPE within 7 days however the DPE has been informed of the status of clean up actions. Refer to main report for further discussion. 2. 12 April 2012: spill of sludge at the WTP which found its way downstream of LDP002. A letter report was provided to the DPE dated 18.04.12. 3. 23 February 2011: dirty water released from CHPP below Leachate Dam No.2 and entered the hanging swamp. Evidence was not available to demonstrate that this incident was reported to the DPE. <p>A review of a print out of Centennial's Incidents and Enquiries Database (ECD) indicated that Clarence had recorded 13 breaches or exceedances of limits during the audit period. The auditors sighted evidence suggesting that in general, the DPE was notified of these exceedances. There may have been instances historically, where notification was not undertaken or records not retained. The following evidence was sighted for the three exceedances recorded during 2015:</p> <ol style="list-style-type: none"> 1. TSS at LDP002 on 21.04.15. Reported to DPE by email dated 27.04.15. A separate report was not provided however the email included details of the incident. The response email from the DPE dated 27.04.15 did not request any further information. 2. filterable manganese at LDP002 on 2.03.15. Evidence was not available to demonstrate that this exceedance was reported to the DPE. 3. filterable iron at LDP002 on 5.05.15. This was reported to the DPE by email dated 14.05.15. The DPE requested further information which was provided by letter dated 22.05.15. The DPE responded to this by email dated 25.05.15 and requested Clarence take further actions including continue increased frequency (minimum fortnightly) monitoring until it is confirmed the exceedance was an isolated event and engage a suitable specialist to review the available data, site condition and WTP and provide further explanation to the potential cause of the exceedance. A response to this email was provided by letter dated 29.05.15. <p>On the basis that evidence was not available to demonstrate that the DPE was immediately notified of all incidents including exceedances of limits / criteria and provided with a written report within seven days, this condition has been assessed as not verified.</p>	<p>Not verified</p> <p>REC 14 CLR IEA 2016 Ensure records are maintained to demonstrate that the DPE has been immediately notified of all incidents (including exceedances) and provided with a written report within 7 days.</p> <p>REC 15 CLR IEA 2016 Consider revising the Incident Investigation Form to include a prompt for reporting the incident to the DPE.</p> <p>REC 16 CLR IEA 2016 Enter the 2 July 2015 incident into the ECD database. A reference can be included detailing where all of the supporting information can be found.</p>
DA 504-00 Development Consent	S5- 10	The Applicant shall, at its own expense: (a) ensure that 2 of its representatives attend the CCC's meetings; (b) provide the CCC with regular information on the environmental performance and management of the development; (c) provide meeting facilities for the CCC; (d) arrange site inspections for the CCC, if necessary; (e) take minutes of the CCC's meetings; (f) make these minutes available to the public; (g) respond to any comments or recommendations the CCC may have in relation to the environmental management or performance of the development; (h) forward a copy of the minutes of each CCC meeting, and any responses to the CCC's recommendations to the Secretary within a month of acceptance of the minutes by the CCC.	<p>The auditors reviewed a sample of CCC meeting minutes for the period 2011-2015 which indicate adherence to prescribed requirements for the operation of the CCC.</p> <p>CCC members generally undertake a site inspection annually. In 2015, members inspected the area of the July 2015 incident and observed rehabilitation efforts. In 2014 members inspected the REA VI construction area.</p> <p>The CCC meeting minutes were available to the public on the Centennial Clarence website, however they were not being separately provided to the DPE. On this basis this Condition has been assessed as non-compliant.</p>	<p>Administrative non-compliance</p> <p>REC 17 CLR IEA 2016 Ensure a copy of the CCC meeting minutes is provided to the DPE within a month of acceptance of the minutes by the CCC.</p>
DA 504-00 Development Consent	S5- 11	Access to Information Within 1 month of the approval of any management plan/strategy required under this consent (or any subsequent revision of these management plans strategies), the completion of the independent audits required under this consent, or the completion of the AEMR, the Applicant shall: (a) provide a copy of the relevant document/s to the Council, relevant agencies and the CCC; (b) ensure that a copy of the relevant documents is made publicly available at the mine; and (c) put a copy of the relevant document/s on the Applicant's website, to the satisfaction of the Secretary.	<p>Copies of approved management plans, AEMRs and independent audits were available on the Centennial Coal website at: http://data.centennialcoal.com.au/domino/centennialcoal/cc205.nsf/Published.xsp?site=Clarence&type=Environment Management Plan&date=All</p> <p>However revised and approved plans were not being provided to Council, the relevant agencies and the CCC:</p>	<p>Administrative non-compliance</p> <p>REC 18 CLR IEA 2016 Ensure revised management plans are provided to Council, the relevant agencies and the CCC following approval.</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent Appendix 3: Statement of Commitments	Operational Phase Effluent irrigation	Undertake irrigation in accordance with the Effluent Irrigation Operational Environment Management Plan	An Effluent Irrigation Environmental Management Plan was not prepared. It was reported that at the time of the audit site inspection, Clarence was in the process of relocating the irrigation line.	Non-compliant REC 19 CLR IEA 2016 Prepare and implement an Effluent Irrigation Operational Environment Management Plan
DA 504-00 Development Consent Appendix 3: Statement of Commitments	Operational Phase Water monitoring	Update the Water Management Plan to include monitoring of the additional monitoring well. Undertake surface water and groundwater monitoring in accordance with the updated Water Management Plan	The Water Management Plan was revised in February 2015 and approved by the DPE. The revised Plan does not include monitoring of the additional surface and groundwater monitoring points.	Administrative non-compliance REC 20 CLR IEA 2016 Include discussion of the additional surface and groundwater monitoring requirements in the next revision of the Water Management Plan.
DA 504-00 Development Consent Appendix 3: Statement of Commitments	Operational Phase TPHSS monitoring	Annually undertake, in summer months, a rapid assessment on established cross-sections within the THPSS Community to monitor the integrity of the swamp	A rapid assessment on the established cross sections within the THPSS Community had not been conducted during the audit period.	Non-compliant REC 21 CLR IEA 2016 Ensure a rapid assessment on the established cross sections within the THPSS Community is undertaken annually in summer months.
DA 504-00 Development Consent Appendix 3: Statement of Commitments	Operational Phase Heritage	Development of a Cultural Heritage Management Plan for Clarence Colliery	Refer to Condition S3- 30.	Non-compliant (non-Aboriginal heritage)
DA 504-00 Development Consent Appendix 3: Statement of Commitments	Operational Phase Traffic and transport	Undertake line marking to delineate the required parking spaces	It was reported that this had not been undertaken as Centennial was waiting for the car parking area to be resurfaced prior to line marking.	Non-compliant REC 22 CLR IEA 2016 Undertake line marking in the car parking area to delineate parking spaces.
1976 Development Consent	7	Potable water to be of a standard as prescribed by the Health Commission of NSW	Site potable water supply (filtered rainwater) is supplemented with water from the WTP. This water is tested monthly for pH and electrical conductivity (EC). The Australian Drinking Water Guidelines – NHMRC 2011 do not prescribe health-based guideline values for pH and EC. Monitoring data for a broader range of guideline parameters was not available for review, and as such, a full assessment of compliance with this requirement was unable to be performed.	Not verified REC 24 CLR IEA 2016 Develop and implement a monitoring program in accordance with the Australian Drinking Water Guidelines to ensure potable water meets required standards.
1993 Modified Development Consent	5	The applicant shall prepare, within Six (6) months of the commencement of operations for REA III, a detailed rehabilitation plan. This plan is to be submitted to the Department of Mineral Resources, Department of Conservation and Land Management and Council for approval.	This condition was assessed as non-compliant in the previous IEA as no detailed rehabilitation plan specific to REA III had been prepared and approved. Since then, Clarence engaged consultants GSS Environmental to prepare a Conceptual Rehabilitation and Mine Closure Plan (December 2012). However since the development of this plan Clarence reported that rehabilitation planning is largely undertaken through the MOP process. The MOP was revised to include REA VI and approved by the DRE by letter dated 24.11.14. At the time of the audit REA III was yet to be rehabilitated. REA III was subject to a stop works order following the July 2015 incident. The auditors consider that REA III should be rehabilitated as a high priority once the stop works notice is lifted.	Non-compliant REC 25 CLR IEA 2016 Reshape and rehabilitate REA III promptly and effectively with local native vegetation (and in accordance with an approved rehabilitation plan) once the stop works order has been lifted.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
1994 Northern Lease Extension Area Development Consent	3	The applicant shall prepare, in consultation with the National Parks and Wildlife Service, a monitoring plan for the four Newnes Plateau Shrub Swamps located within the Northern Extension. The plan will measure the impacts, following subsidence, of changes to water levels, plant presence, abundance, structure and animal presence. Monitoring will include amphibians, reptiles, birds and mammals, with special emphasis on the Blue Mountains Water Skink and rare plants. Monitoring will include any appropriate comparisons with swamp areas not subject to longwall mining and shall be undertaken for a period of at least 5 years.	A specific Flora and Fauna Monitoring Plan has not been developed in consultation with the NPWS. Instead, flora and fauna monitoring is outlined in the area specific SMP Environmental Monitoring Programs. Evidence of the implementation of flora and fauna monitoring of the Newnes Plateau was sighted. Centennial commissioned consultants to conduct seasonal vegetation monitoring on the Newnes Plateau across its three western mines (Angus Place, Springvale and Clarence). The auditors sighted the 2011 Annual Flora Monitoring Report (University of Queensland) and the 2014 Spring and Annual Report (Gingra Ecological Surveys) These included species richness and composition monitoring within 20m x 20 m plots at 10 sites for Clarence. Fauna monitoring was undertaken by Biodiversity Monitoring Services and was reported in the 2014 AEMR to have been undertaken in the 700 Area (Eastern, Western and Outbye), 800 Area (Eastern portion) and the 900 Area. The auditors sighted examples of monitoring reports for the Western SMP areas (2011 Annual Fauna Monitoring Report by Biodiversity Monitoring Services) and the 900 SMP area (Fauna Monitoring Program Panels 913 and 917 2014). A variety of survey techniques were employed to target small mammals (including bats), reptiles, birds and amphibians. Targeted searches were conducted for threatened species such as the Blue Mountains Water Skink and the Giant Dragonfly.	Administrative non-compliance REC 26 CLR IEA 2016 Update the Environmental Monitoring Program to include details of the flora and fauna monitoring undertaken and provide to the NPWS for consultation.
1994 Northern Lease Extension Area Development Consent	9	The applicant shall consult with the Soil Conservation Service during topsoil stripping and stockpiling associated with Reject Emplacement Areas IV and V.	REA V was yet to be constructed at the time of the audit. REA IV had been constructed and used to capacity and was in the process of being rehabilitated during the audit period. It was reported that the Soil Conservation Service was not consulted during soil stripping and stockpiling. It is noted that since this approval was granted in 1994, the Soil Conservation Service has undergone changes and is now a commercial entity within the Department of Primary Industries providing environmental consulting services. It is not clear whether consultation with the Soil Conservation Service is still considered relevant. On this basis, this Condition has been assessed as not verified. Topsoil stripping and stockpiling are discussed in the MOP which was approved by the DRE.	Not verified REC 27 CLR IEA 2016 Confirm with the DPE whether consultation with the Soil Conservation Service is required during topsoil stripping and stockpiling associated with REA V.
1994 Northern Lease Extension Area Development Consent	11	The applicant shall prepare, within 6 months of the commencement of operations for Reject Emplacement Area IV and Reject Emplacement Area V respectively, a detailed rehabilitation plan for each area. This plan is to be submitted to the Department of Mineral Resources, the Soil Conservation Service and Council for approval.	REA IV had been constructed and used to capacity and was in the process of being rehabilitated during the audit period. A detailed rehabilitation plan was not prepared and approved by the DRE, Soil Conservation Service and Council within 6 months of commencement of operations of REA IV. On this basis, this Condition has been assessed as non-compliant. REA V was yet to be constructed during the audit period.	Non-compliant REC 28 CLR IEA 2016 Develop a detailed rehabilitation plan for REA V and VI within 6 months of the commencement of REA V and submit to the DRE, Soil Conservation Service and Council for approval.
1994 Northern Lease Extension Area Development Consent	12	The applicant shall consult with the Soil Conservation Service in respect of the progressive and final rehabilitation of Reject Emplacement Areas IV and V. Rehabilitation of these areas is to be undertaken to the satisfaction of the Soil Conservation Service, the Department of Mineral Resources and Council.	REA IV was in the process of being rehabilitated during the audit period. The Soil Conservation Service had not been consulted with regarding the progressive rehabilitation of REA IV. As stated above it is not clear whether consultation with the Soil Conservation Service is still considered relevant and on this basis, this Condition has been assessed as not verified. REA V was yet to be constructed during the audit period.	Not verified REC 29 CLR IEA 2016 Confirm with the DPE whether consultation with the Soil Conservation Service is required regarding the progressive rehabilitation of REA IV and REA V.
Environment Protection Licence 726	A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	The previous IEA reported that site does not hold a copy of its original EPL Application and recommended that a copy is obtained. This was not actioned and is still considered relevant.	Not verified REC 30 CLR IEA 2016 Obtain a copy of the Original EPL Application and ensure compliance with the application.
Environment Protection Licence 726	L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	Section 120 of the POEO Act relates to the prohibition of pollution of waters, and provides: (1) A person who pollutes any waters is guilty of an offence. (2) In this section: "pollute" waters includes cause or permit any waters to be polluted The auditors interpret this provision to mean non-compliance with EPL discharge limits, amongst other potential actions. On the 2 July 2015 part of the eastern wall of REA III failed resulting in the release of both coarse reject and liquid coal fines into the Wollongambe River. This incident is discussed further in the Main Report. In addition a number of non-compliances with the pollution concentration limits specified by Condition L2.1/2.4 have occurred, as described under EPL L2.1 below. On the basis of the July 2015 incident this condition has been assessed as non-compliant.	Non-Compliant (refer main report and L2.4)

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	L2.1 / L2.4	For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	<p>The auditors reviewed the Annual Returns and select source data for the period 2013-2015. A brief review of the 2012 and 2011 Annual Returns also noted exceedances of discharge limits, however these were not assessed in detail.</p> <p><u>2015</u></p> <p>In its 2015 Annual Return Clarence reported the following non-compliance with Condition L2.4 of its EPL:</p> <ul style="list-style-type: none"> - exceedance of filterable manganese limit at LDP002 on the 2.03.15 caused by a power outage which resulted in inadequate treatment at the WTP. In response, Clarence installed an in-line real time manganese probe to provide continuous feedback on water treatment. - exceedance of TSS level (30 mg/L) at LDP002 (103 mg/L recorded) on the 21.04.15. This was caused by a significant rainfall event which exceeded the capacity of the dirty water management system. - exceedance of filterable iron limit at LDP002 on the 05.05.15. This was caused by a malfunction within the Dissolved Air Flotation (DAF) unit of the WTP causing inadequate treatment of iron. In response Clarence installed real time, continuous monitoring equipment at the WTP to provide continuous feedback on the functionality of the plant. <p>The auditors reviewed the ALS monitoring report provided as an MS Excel workbook for the month of December 2015 which included a summary of the discharge monitoring results at LDP002 in a separate worksheet for the whole year ('ldp002 database') and confirmed that the exceedances correlated with what was reported by Clarence in its Annual Return. A random check of other months was also conducted. (March, April and July 2015) and no discrepancies with what was reported identified for those months.</p> <p><u>2014</u></p> <p>The auditors reviewed the ALS monitoring report for the month of December 2014. The review of the 'ldp002 database' which included the data for the 2014 calendar year, indicated one instance on the 13.11.14 where the recorded arsenic level (0.06 mg/L) was above the limit (0.01 mg/L). This exceedance was not reported as it related to a non-routine sample and was missed during the review of the monthly monitoring results.</p> <p>All other pollutants were within the limits prescribed in the EPL.</p> <p><u>2013</u></p> <p>The auditors reviewed a spreadsheet titled '2013 Clarence Annual Return Results 'which was compiled by the Clarence Environment and Community Coordinator from the monthly ALS reports. The review indicated the following exceedances of pollutant limits:</p> <ul style="list-style-type: none"> - pH of 6.44 (beneath the lower limit of 6.5) recorded in the 5.03.13. The lower pH limit was subsequently revised in the EPL to be 6.0. - filterable manganese level of 0.593 mg/L recorded on the 21.10.13 exceeding the limit of 0.5 mg/L 	Non-compliant
Environment Protection Licence 726	L3.1	<p>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:</p> <p>(a) liquids discharged to water; or;</p> <p>(b) solids or liquids applied to the area;</p> <p>must not exceed the volume/mass limit specified for that discharge point or area:</p> <p>Point 2: 25000kilolitres per day</p> <p>Note: The total volume discharged from point 2 may exceed 25,000 kL/day on any day where greater than 10 mm of rainfall is recorded at the premises, for that day.</p>	<p>The auditors reviewed the MS Excel workbook 'LDP2 Volume Discharge' which included the daily discharge volumes for the period 1.01.13 to 29.02.16. A review of this data indicated two instances in 2015 (20 and 21 April) where the 25,000 kL/day limit was exceeded. The auditors reviewed the 15 minute meteorological station data for 2015 and confirmed that both these instances followed rainfall events greater than 10 mm (65.6mm and 40.4 mm respectively) and therefore these were not considered non-compliances.</p> <p>There were also five instances in 2013 where the limit was exceeded. A review of the rainfall data for these dates indicated four of these exceedances correlated with rainfall events however one exceedance on the 21.06.13 (26,962 kL/day recorded) did not. This was not reported as a non-compliance in the Annual Return.</p>	Non-compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	<p>The incident on the 2 July 2015 where coarse and fine coal rejects were discharged from the site and into the Wollangambe River was caused by the overtopping of a temporary coal fines holding cell on REA III, resulting in bridging of the leachate drain. It is considered that at the time of the incident, the treatment, storage and disposal of coal fines was not being carried out in a competent manner.</p> <p>Observations of the pit top area also indicated areas where the handling and storage of materials and waste required improvement, specifically:</p> <ul style="list-style-type: none"> - the grit trap and primary arrestor were not operating as designed and did not have the freeboard to act as effective sediment basins. Sediment (mostly coal) was observed to be overtopping the grit trap. It was also difficult to access the grit trap to clean out. - the grit trap was not designed to capture and treat water from the vehicle washdown bay which contributed to its operating capacity. - minor spills were observed across the pit top. In particular the area near the drum crusher and waste drum bin had oily residues released to land. - one of the pipes from the primary arrestor was observed to be full of sediment - oil and grease store was not banded (it is noted that most of the drums stored here were new and unopened drums on wooden pallets) - bulk diesel fuel tank bowser was not banded and some minor spills were observed near the refuelling area. <p>As discussed under DA 504-11 S3-6A, Clarence commissioned an independent review of its surface water management. The Draft report was completed outside of the audit period and as such was only briefly reviewed by the auditors. A comprehensive independent review of the report was not conducted, however the auditors support the further investigation of improved water management approaches to reduce compliance risks, and support the implementation of further actions to improve water management performance. Refer also to DA 504-00 S3-26 for assessment of storage, handling and transport of dangerous goods.</p>	<p>Non-compliant</p> <p>REC 31 CLR IEA 2016 Undertake general housekeeping of the pit top, including cleaning up of minor spills, ensuring stores are appropriately banded, cleaning out traps and pits.</p> <p>Refer also to recommendations under DA504-00 S3-6A</p>
Environment Protection Licence 726	O2.1	<p>All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.</p> <p>Note: Plant is defined in the Dictionary. The type of plant and equipment that should be considered includes, but is not limited to, drainage systems; infrastructure and pollution control equipment such as (but not limited to) spill containment and clean-up equipment; dust screens and collectors; sediment collection systems, traps and sumps; waste collection, storage and disposal equipment.</p>	<p>The site maintains an Electrical Engineering Management Plan (MP-1913, Rev2, 30.08.10) and a Mechanical Engineering Management Plan (CL-MS-001-P-017 Rev1 1.10.11).</p> <p>It was reported that there were plans to review the Electrical Engineering Management Plan in 2016.</p> <p>The site's Mechanical Engineering Management Plan indicates a planned review date of October 2014. It appears that this planned review has yet to occur or be finalised.</p> <p>Examples of Maintenance Work Orders generated from the Centennial Coal Pulse Maintenance System were sighted by the auditors including the maintenance schedule for the Water Treatment Plant (WTP) and the Daily Inspection WTP Operational Checklist. The day to day operation of the site's water treatment plant (WTP) was undertaken by electrical contractors Ampletech. Remote monitoring and operational support was provided by Total Air Pollution Control (TAPC - formerly EGL) who designed and installed the plant over 10 years ago. The efficiency of the operation of the WTP can be remotely checked using SCADA.</p> <p>Responsibility for the operation of the train loader was recently handed over from the pit electricians to the CHPP. It was reported that CHPP personnel underwent rigorous training prior to taking over operational duties.</p> <p>For contracted plant and equipment (including dozers, loaders and trucks), contractors (Henry's) reportedly have their own services books and schedule which is overseen by the CHPP engineering coordinators.</p> <p>Spill containment and clean-up equipment was maintained by waste contractor JR Richards during fortnightly inspections.</p> <p>The meteorological station was reportedly maintained by ALS on a quarterly basis. ALS also reportedly calibrated the flow meter at LDP002 on a quarterly basis.</p> <p>The Monthly Environment Inspection and Weekly Environment Inspection undertaken by the Environment and Community Coordinator includes a check of water management structures (e.g. drainage lines, pipelines, discharge structures, pit top grit trap, polishing lagoon, primary arrestor and leachate dams) (sighted completed examples dated 1.06.15 and 15.06.15). Based on these inspections, the Coordinator organises maintenance of the water management structures as required.</p> <p>It was reported that Clarence was planning to de-silt the polishing lagoon and dredge Leachate Dam 1 in the near future. The grit trap (one side) and the settling pond off the WTP were reportedly cleaned approximately 3-4 weeks prior to the site inspection. The primary arrestor was reportedly last de-silted in late 2015. Maintenance of the small sumps beneath the conveyors was undertaken by Henry's.</p> <p>An oil water separator was observed on site which had reportedly not been operational for a number of years. Clarence stated that the Oil and water separator will be removed as it is not functional. Clarence consider that there is a low risk of oil and grease exceedance given history of discharge with no exceedances.</p> <p>As discussed under O1.1 above, during the site inspection the pit top area was noted to require further maintenance and general housekeeping.</p> <p>Given the note in the condition defines the "plant and equipment" that should be considered as including sumps and sediment control systems, it is considered that the July 2015 spill is potentially relevant to this condition. On the basis that there is outstanding regulatory action by the EPA in relation to this event (not considered in this audit) potentially relevant to this condition, auditors assessed this condition as being Not Verified.</p>	<p>Non Verified</p> <p>REC 32 CLR IEA 2016 Consider whether an oil water separator is required to manage wastewater from the washdown bay.</p> <p>REC 33 CLR IEA 2016 Review and update the Electrical Engineering Management Plan and Mechanical Engineering Management Plan</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	M3.1	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted. Note: The Protection of the Environment Operations (Clean Air) Regulation 2010 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".	The ALS monitoring results Excel workbook includes a spreadsheet titled 'Methodology of Water Analysis'. This spreadsheet lists the test, method and laboratory undertaking the analysis. It also includes a note which states "in accordance with 'Standard Methods for the Examination of Water and Wastewater'. The auditors reviewed the 'Approved Method for the Sampling and Analysis of Water Pollutants in New South Wales' produced by the EPA and compared the EPA approved methods with those listed in the 'Methodology of Water Analysis' spreadsheet of the December 2014 monitoring results workbook. The following was noted: - The list of tests and methods used does not include all of the pollutants tested. For example, arsenic, boron, cadmium, selenium and zinc. - A number of the methods listed are in-house methods that may comply with the Approved Methods however this is not evident or noted in this document. The previous IEA noted some variations between the Approved Methods and those undertaken by the laboratory. It recommended that Clarence Colliery require its third-party water discharge sample analysis contractor (ALS) to provide clarification in relation to variations between its analytical methods and those prescribed by NSW EPA. It also recommended that ALS confirm and document within its analytical reports that the samples were analysed within a laboratory holding times. These recommendations are still considered relevant.	Not verified REC 34 CLR IEA 2016 The 'Methodology of Water Analysis' spreadsheet within the monthly monitoring results Excel workbook provided by ALS should be revised to ensure the list of test methods includes all the tests conducted as required by the EPL. This table should also include a reference to the Approved Methods prescribed by the NSW EPA and clarify or note any variations between the methods used. ALS should confirm and document within its analytical reports that samples are analysed within laboratory holding times.
Environment Protection Licence 726	M4.2	The results of the noise monitoring required by condition M4.1, and an interpretation of these results, must be provided as an attachment to each corresponding years Annual Return.	The results of the noise monitoring were not included as an attachment to each corresponding years Annual Return but were instead included within the AEMR. This is strictly not complying with the condition. It was reported that should an exceedance be recorded then it would be reported to the EPA.	Administrative non-compliance REC 35 CLR IEA 2016 Attach the noise monitoring results to the Annual Return or receive written confirmation from the EPA that it is satisfied with receiving the results as part of the AEMR.
Environment Protection Licence 726	M5.1	Weather monitoring For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.	The meteorological station was operational during the audit period. It was reportedly maintained by ALS on a quarterly basis with results uploaded into the client data portal. The auditors observed results for 1/03/2012 to Jan 2016. It was reported that prior to 2012, ALS were not operating the meteorological station and therefore data was not available from ALS for this period. This historical data may be available however was difficult to source. A review of the data indicated that the specified parameters were monitored with the exception of sigma theta. Clarence was clarifying this with ALS. An independent review of compliance with the NSW EPA Approved Methods for Sampling of Air Pollutants in New South Wales has not been undertaken as part of this audit. Clarence reported that the Meteorological station is to be upgraded in Quarter 3, 2016.	Not verified REC 36 CLR IEA 2016 Ensure the meteorological station is measuring the sigma theta and that this data is provided to Clarence.
Environment Protection Licence 726	R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	The timing of the submission of the Annual Returns was not able to be verified as, whilst prepared by Clarence personnel, it is submitted by Centennial Corporate and the evidence of submission was not held locally.	Not verified REC 37 CLR IEA 2016 Obtain evidence of submission of the Annual return within the specified timeframe from Centennial Corporate and maintain / file on site.
Environment Protection Licence 726	R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	For the July 2015 incident, a written report was provided to the EPA dated 9.07.15. In addition a Clean Up Notice was issued by the EPA on the day following the incident requiring Clarence provide weekly reports of the status of the clean up. The Environment and Community Coordinator has been providing weekly reports to the EPA since the date of the incident (02.07.15). The auditors sighted examples of these weekly reports. This incident is discussed further in the main section of the report. For the incident on the 12.04.12, a written report was provided to the DPE dated 18.04.12. It assumed that this same report was also provided to the EPA however the report to the EPA was not sighted. The written report following the incident on the 23.02.11 was not available. Based on evidence not being available to demonstrate written reports were provided to the EPA for the historical incidents in 2011 and 2012, this condition has been assessed as not verified.	Not verified
Environment Protection Licence 726	G2.1	The location of EPA identification points 1 to 8 must be clearly marked by a sign that indicates the EPA identification points used in this licence and be located as close as practical to these points.	It was reported that the dust gauges were sign posted (these were not observed during the site inspection) however the Licensed Discharge Points were not clearly marked. Post site inspection it was reported that signs for the Licensed Discharge Points have been ordered.	Non-compliant REC 38 CLR IEA 2016 Install signs clearly marking licensed discharge points with the EPA identification number as close as practical to the points.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Consolidated Coal Lease 705	13	<p>Rehabilitation</p> <p>a- Land disturbed must be rehabilitated to a stable and permanent form suitable for a subsequent land use acceptable to the Director-General and in accordance with the Mining operations plan so that</p> <ul style="list-style-type: none"> - there is no adverse environmental effect outside the disturbed area and that the land is properly drained and protected from soil erosion. - the state of the land is compatible with the surrounding land and land use requirements. - the landforms, soils, hydrology and flora require no greater maintenance than that in the surrounding land. - in cases where revegetation is required and native vegetation has been removed or damaged, the original species must be re-established with close reference to the flora survey included in the Mining operations plan. - if the original vegetation was not native, any re-established vegetation must be appropriate to the area and at an acceptable density, - the land does not pose a threat to public safety <p>b- Any topsoil that is removed must be stored and maintained in a manner acceptable to the Secretary</p>	<p>Clarence engaged environmental consultants AECOM to develop a rehabilitation monitoring program in 2012. The methodology includes Landscape Function Analysis, vegetation dynamics, habitat complexity, disturbance assessment and photographic monitoring. The monitoring program includes seven monitoring sites, comprising four sites in rehabilitated areas (one in each of REA I, REA II, REA III and REA IV) and three analogue sites located within adjacent undisturbed bushland. Monitoring has been undertaken since 2012. The 2015 monitoring report (AECOM 5.02.16) made the following overarching conclusions:</p> <ul style="list-style-type: none"> - overall improvement from 2014 indicating signs of recovery from the impacts of the State Mine Bushfire in October 2013. - REA I and REA II rated as 'satisfactory'. REA III rated as 'poor' and REA IV rated as 'very poor'. - active erosion was observed at most rehabilitated sites. REA III and REA IV were the most affected with moderately severe gullies occurring in places, and tunnelling erosion occurring at REA IV. The lack of ground cover and low densities of woody vegetation at these sites was a concern for achieving a stable landform. <p>Recommendations included:</p> <ul style="list-style-type: none"> - undertaking maintenance direct seeding to increase ground cover. - undertaking maintenance tube stock planting of endemic canopy species in areas where trees and shrubs are failing to establish - undertaking regular walkthrough of rehabilitated areas to visually monitor erosion and consider implementing remediation works as required if overall landform stability gets compromised. - adding / spreading organic material on the ground to enhance ground cover and organic matter due to the lack of topsoil. - continuing the implementation of the pro-active weed control program including undertaking a regular (at least monthly) walk through of the rehabilitated areas to detect potential onset of weeds. <p>At the time of the audit site inspection, as outlined in the rehabilitation monitoring reports, disturbed land was yet to be rehabilitated to a stable and permanent form.</p> <p>Given this, the auditors were not able to verify compliance with the condition. However with further remedial actions implemented as described above, rehabilitation performance may improve. The compliance status for this condition is considered Not verified.</p> <p>Rehabilitation monitoring and maintenance was ongoing.</p>	<p>Not verified</p> <p>REC 39 CLR IEA 2016</p> <p>Implement recommendations made in the 2015 Rehabilitation Monitoring Report (AECOM 2016). These included:</p> <ul style="list-style-type: none"> - undertaking maintenance direct seeding to increase ground cover. - undertaking maintenance tube stock planting of endemic canopy species in areas where trees and shrubs are failing to establish - undertaking regular walkthrough of rehabilitated areas to visually monitor erosion and consider implementing remediation works as required if overall landform stability gets compromised. - adding / spreading organic material on the ground to enhance ground cover and organic matter due to the lack of topsoil. - continuing the implementation of the pro-active weed control program including undertaking a regular (at least monthly) walk through of the rehabilitated areas to detect potential onset of weeds. <p>REC 40 CLR IEA 2016</p> <p>Ensure continual review of rehabilitation performance by competent persons and regular implementation of strategies to improve rehabilitation.</p>
Consolidated Coal Lease 705	16	<p>Prevention of Soil Erosion and Pollution</p> <p>Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a 'relevant approval, and in accordance with an accepted Mining Operations plan. The purpose of this condition, water shall be taken to include any watercourse, water body or groundwaters. The lease holder must observe and perform any instructions given by the Secretary in this regard</p>	<p>This condition has been assessed as non-compliant based on the pollution incident in July 2015 which is discussed further in the main report.</p> <p>Observations of the pit top area also indicated operations were not being carried out in a manner to minimise the potential for pollution. Refer to EPL Condition O1.1.</p>	<p>Non-compliant</p> <p>Refer EPL O1.1</p>
Consolidated Coal Lease 705	26	<p>Single Security (extended)</p> <p>a- The single security of \$1,500,000.00 given and maintained with the Minister by the lease holder for the purpose of ensuring the fulfilment by the lease holder of obligations under Consolidate Coal Lease No. 705 (Act 1973) and Mining Leases No's. 1353 and 1354 (Act 1992) is extended to apply to this renewal of this lease</p> <p>b- If the lease holder fails to fulfil any one or more of the obligations under this lease, then the security held may be applied at the discretion of the Minister towards the cost of fulfilling such obligations. For the purpose of this 'clause the lease holder shall be deemed to have failed to fulfil the obligations of the lease if the lease holder fails to comply with any condition or provision hereof, any provision of the Act or regulations made there under or any condition or direction imposed or given pursuant to a condition or provision hereof or of any provision of the Act or regulations made there under</p>	<p>A spreadsheet of securities held by Clarence was sighted and indicated that the required security was held, with Security Certificate 23081002 held for CCL 705, ML1353 and ML1354. The amount of security reportedly held under this Certificate is \$9,267,851.52 calculated in November 2015 and submitted to DRE on 4.03.16.</p> <p>A copy of the Bank Guarantee was not made available or sighted, hence compliance with the condition could not be verified.</p>	<p>Not Verified</p> <p>REC 41 CLR IEA 2016</p> <p>Make available a copy of the Bank guarantee to ensure compliance with the condition.</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Consolidated Coal Lease 705	29	<p>With regard to condition No. 28 and the plan annexed hereto and marked "B", the lease holder:</p> <p>a- unless with the consent of the Minister, and subject to such conditions as he may impose the lease holder shall not .dump on the subject lands any residues derived from the beneficiation of coal</p> <p>b- The lease holder shall provide and maintain to the satisfaction of the Minister efficient means to prevent contaminated waters discharging or escaping from the subject area onto surrounding areas and shall comply with any direction given or which may be given in this regard by the Minister</p> <p>c- The lease holder shall carry out and maintain the works authorized in such a manner as not to cause any danger to person or stock</p> <p>d i) the lease holder shall as far as may be practicable, carry out the works hereby authorised in such a manner as to interfere as little as possible with any track traversing the subject lands</p> <p>ii) The lease holder shall comply with any direction which may be given by the Minister or the Secretary regarding use by the public of any such track and if required to do so by the Minister the lease holder shall provide alternate tracks to the satisfaction of the Minister</p> <p>e- The lease holder shall carry out the works hereby authorised in such a manner as not to interfere with the operations of the holder of Permissive Occupancy No 64 /2 Lithgow and any dispute between the lease holder and the holder of the said permissive occupancy shall be decided by the Minister whose decision shall be final</p> <p>f- The lease holder shall upon abandonment of any drill hole on the subject lands, fill in or suitably plug such a drill hole to the satisfaction of the Minister</p> <p>g- The lease holder shall construct and maintain the railway within the subject area in accordance with the specifications and requirements of Rail Corporation of New South Wales</p> <p>h- The lease holder shall ensure that access over the subject land is available at all times to employees of Rail Corporations of New South Wales whilst in performance of their duties</p> <p>i) The lease holder shall within twenty four (24) hours notify the National Parks and Wildlife Services with laboratory analysis results of waters samples taken at discharge points</p> <p>k) The lease holder shall not dump or deposit any coal bearing material extracted during the construction of any shaft on the subject area. Such material shall be removed to the pit head dump facilities of the Clarence Colliery</p> <p>l) Notwithstanding the preceding conditions the lease holder shall not commence any excavation of works directly related to the construction of any shaft within the subject area until such time as the proposed siltation / setting dams have been constructed</p> <p>m) The lease holder shall ensure that any dam constructed on the subject area is not brought into operation until such time as the District inspector of Coal Mines has certified that</p> <p>i) the walls of any such dam has been compacted</p> <p>ii) the capacity of any such dam conforms to design specifications</p>	<p>a) Existing REA's have Section 100 approvals. At the time of the audit Clarence was in the process of obtaining HRA approval (replaced Section 100 approval) of REA V.</p> <p>b) The July 2015 incident resulted in coal fines discharging from REA III into the surrounding area and waters. Refer to main report for further discussion of this incident.</p> <p>c) No incidents of people or stock damage reported. Safety has not been assessed as part of this audit.</p> <p>d) no correspondence was noted by landowners or council regarding interference with tracks.</p> <p>e) not assessed;</p> <p>f) It was reported that exploration bores are grouted to the surface. Bores that are used for exploration and then monitoring purposes have a monument at the surface housing the piezometer. One open borehole was observed during the site visit in the vicinity of Leachate Dam 1. The Environment and Community Coordinator was not aware of it's purpose as it was constructed prior to him being on site.</p> <p>g) not assessed;</p> <p>h) not assessed;</p> <p>i) This condition relates to area marked Green on Plan B which relates to the downcast shaft. It was reported that there have been no discharges from this area and therefore the requirement to provide results to the NPWS was not triggered.</p> <p>k) it was reported that no coal has been dumped at the downcast shaft area;</p> <p>l) not assessed;</p> <p>m) not assessed;</p> <p>n) not assessed.</p> <p>o) not assessed</p>	<p>b) Non-compliant</p> <p>a) – o) Compliant or not assessed</p> <p>REC 42 CLR IEA 2016</p> <p>Seal off open borehole near leachate dam 1.</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
		iii) any such dam is structurally sound and iv) the wall and catch drain of any such dam are so located as to trap all down slope movement of material from the construction site n) All topsoil is to be stockpiled prior to the construction of the proposed dams. Such topsoil is to be replaced on the walls of the completed dams o) The dam batters are to be constructed in such a manner as to ensure the stability of the completed earth structure		
Mining Lease 1583	25	Security a) A security in the sum of \$50,000.00 must be given and maintained with the Minister by the lease holder for the purpose of ensuring the fulfilment by the lease holder of obligations under this lease. If the lease holder fails to fulfil any one or more of such obligations the said sum may be applied at the discretion of the Minister towards the cost of fulfilling such obligations, For the purpose of this clause the lease holder shall be deemed to have failed to fulfil the obligations of this lease If the lease holder fails to comply with any condition or provision hereof, any provision of the Act or regulations made there under or any condition or direction imposed or given pursuant to a condition or provision hereof or of any provision of the Act or regulations made there under b) The lease holder must provide the security required by sub-clause (a) in one of the following forms i) cash, ii) a security certificate in a form approved by the Minister and issued by an authorised deposit - taking institution	A spreadsheet of securities held by Clarence was sighted and indicated that the required security was held, with Security Certificate 23081002 held for CCL 705, ML1353 and ML1354. The amount of security held under this Certificate is \$9,267,851.52 calculated in November 2015 and was reported to have been submitted to DRE on 4.03.16. A copy of the Bank Guarantee was not made available or sighted, hence compliance with the condition could not be verified.	Not Verified As per CCL Condition 26
Subsidence Management Plan 800 Area Approval	7	Notification of Approval The Proponent must give notice of this SMP approval with 30 days to the DP&I, NOW, OEH, Council, MSB, the local Aboriginal Land Council the owners/ operators of any infrastructure and landowners in the application area and any relevant government agencies of stakeholders that the Director General's approval of the SMP has been granted	No documents were available in relation to this condition hence compliance could not be verified.	Not verified

10.1 Additional Opportunities for Improvements

The following table has been compiled from **Appendix A**, site observations and the review of the Environmental Management Strategy and Environmental Monitoring Program. For details on the requirement, and for further discussion of the issue, please refer directly to the table in **Appendix A** or the relevant section of this report. Many recommendations are based around continuous improvement opportunities identified during the audit and do not necessarily represent immediate potential non-compliance issues.

Table 10-2 Summary of Opportunities for Improvement

Approval & EPL Condition Number	OFI. #	Opportunity for Improvement
DA 504-00 S3-7	OFI 01 CLR IEA 2016	Include further details of the water balance in the AEMR including volumes of water discharged by the mine
DA 504-00 S3-8	OFI 02 CLR IEA 2016	Include a drawing / plan showing the location of erosion and sediment control structures and key water features within the next revision of the WMP
DA 504-00 S3- 12A	OFI 03 CLR IEA 2016	Verify status of draft regional Biodiversity Strategy & ensure a plan is in place to ensure compliance with this condition prior to end of Dec 2016
DA 504-00 S3- 15	OFI 04 CLR IEA 2016	Include a brief discussion of the unattended noise monitoring results within the Noise Compliance Assessment reports including their purpose and an interpretation of the results.
DA 504-00 S3- 28	OFI 05 CLR IEA 2016	Revise the Conceptual Rehabilitation and Rehabilitation and Mine Closure Plan to reflect changes since 2012.
DA 504-00 S4- 1	OFI 06 CLR IEA 2016	Notification requirements of this and any other relevant condition should be entered into the subsidence TARP within the SMPs.
DA 504-00 S4- 1	OFI 07 CLR IEA 2016	Ensure that all exceedances of subsidence criteria are notified to landholders and the DPE.
DA 504-00 S5- 3	OFI 08 CLR IEA 2016	Revise the Environmental Monitoring Program to be consistent with current monitoring requirements and the EPL.
DA 504-00 S5- 5	OFI 09 CLR IEA 2016	Request a formal response from the DRE on the 2014 AEMR for Clarence's records.
DA 504-00 S5- 5	OFI 10 CLR IEA 2016	Ensure requirement (g) to identify any trends in the monitoring results over the life of the development is included with the AERMRS for parameters including air, noise and water.
DA 504-00 S5- 12	OFI 11 CLR IEA 2016	Include results of the six monthly TSP monitoring in the Monthly Environmental Monitoring Report when results become available.
DA 504-00 Statement of Commitments <i>Operational Phase</i> Rail noise and vibration	OFI 12 CLR IEA 2016	Include within Appendix C of the Noise Management Plan Western Region discussion of the implementation of acoustical mitigation at receivers R1 to R6.
EPL 726 O4.1	OFI 13 CLR IEA 2016	Undertake a review to determine whether EPA Point 1 is required and if not seek to remove it from the Licence. If the review determines it is a relevant Discharge Point then seek to better define it both within the description in the EPL and physically on site (i.e. with signage and a better established discharge and monitoring point).
EPL 726 O4.2	OFI 14 CLR IEA 2016	Introduce a mechanism for ensuring maintenance is undertaken as necessary to desilt the Leachate Dams for example including a work order in the PULSE system and/or including a check on the Environmental Inspections.
ML 1583 19	OFI 15 CLR IEA 2016	As per previous IEA, discuss with State Forests how the condition of the roads could be improved.

Approval & EPL Condition Number	OFl. #	Opportunity for Improvement
Incident management (Section 4.1)	OFl 16 CLR IEA 2016	Ensure all incidents, including minor Category 5 incidents are reported internally and logged into ECD
Environmental Management Strategy (Section 7.2)	OFl 17 CLR IEA 2016	<p>Consider the following during the next update of the Environmental Management Strategy:</p> <ul style="list-style-type: none"> • Update references to ensure the most relevant documents are referred to (e.g. MOP, Lithgow Local Environmental Plan) • Include within the Statutory Requirements section a list of the key licences and approvals specific to the site (e.g Development Consent, EPL, Mining Leases, MOP, Subsidence Plans, Dangerous Goods Notifications, Authorisations, Water Licences etc.) • Ensure sections on air and noise reflect current operations (e.g. a sampling unit to measure TSP and PM₁₀ has been installed, noise complaints have been received). • Revise Emergency Procedures section to discuss the requirements of POEO Act and Regulations for reporting pollution incidents immediately to relevant agencies and to reference Clarence's Pollution Incident Response Management Plan (PIRMP). • Include within the Environmental Non-Compliance Section discussion of how incidents and non-compliances are logged and managed using Centennial's internal incident reporting system ECD. • Include the requirements of the POEO Act to publish pollution monitoring data collected as a result of a licence condition. • Update the Cumulative Impact Assessment section to reflect actual operations taking place in surrounding area. • Better outline the links between the Strategy, Management Plans and EMS including Centennial Coal Standards and Procedures. This could be in the form of a framework diagram.
Environmental Monitoring Program (Section 7.3)	OFl 18 CLR IEA 2016	<p>Consider the following during the next update of the Environmental Monitoring Program:</p> <ul style="list-style-type: none"> • Include the unattended noise monitoring requirements of the EPL. • Include a summary of the various flora and fauna monitoring requirements of the Area specific SMP Environmental Monitoring Programs. • Ensure the section on air quality monitoring reflects the revised long term air monitoring requirements proposed in the Draft Western Region AQGHG Management Plan (once approval is received). • Ensure surface water and groundwater monitoring requirements reflect what is currently undertaken and the EPL. • Expand the existing surface water monitoring program to include water quality parameters relevant in the Main Dam for comparison against relevant ecosystem protection guidelines. The frequency of monitoring would require further consideration. • Include a discussion of the aquatic ecology monitoring undertaken in the Wollongambe River. • Include a summary of the monitoring requirements of the Draft Wollongambe Environmental Monitoring Program. • Develop a water quality monitoring program (in consultation with DPI Water and LCC) for the treated water leaving site via Farmers Creek used by LCC. This program requires identification of relevant criteria, action levels, and associated corrective actions.
Subsidence (Section 9.2.2)	OFl 19 CLR IEA 2016	That monitoring of flooded areas be undertaken for as long as practicable to confirm stabilisation to a limit for mined areas impacted by flooding.

Approval & EPL Condition Number	OFl. #	Opportunity for Improvement
Subsidence (Section 9.2.2)	OFl 20 CLR IEA 2016	That in future subsidence reviews and modelling by independent experts, the influence of flooding of workings affecting subsidence be further investigated; particularly in respect of how these influences may impact Clarence conforming to the subsidence criteria in the long term. Future subsidence models should take into account such influences.
Groundwater (Section 9.3.4)	OFl 21 CLR IEA 2016	Continue to implement recommendations made by Aurecon to repair and reinstate damaged equipment such as by the fires to maintain an adequate array of monitoring equipment.
Subsidence impacts on surface water (Section 9.4)	OFl 22 CLR IEA 2016	It is recommended that groundwater monitoring be conducted for suitable swamp(s) such as the Paddy's East Swamp to provide Clarence with information to inform third parties that monitoring is adequate with suitable coverage; and that no groundwater impacts from recent mining are occurring in selected swamps.

11 Limitations of Report

MCW Environmental Consulting Pty Limited (MCW Environmental) has conducted this Independent Environmental Audit (IEA) and generated this report in accordance with the usual care and thoroughness of the consulting profession for the use of Centennial Clarence Pty Ltd and only those third parties who have been authorised in writing by MCW Environmental to rely on this Report.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report. This IEA report did not assess any aspects relating to safety or soil or groundwater contamination at the site.

The IEA Report is prepared in accordance with the scope of work and for the purpose outlined in the MCW Environmental Proposal dated 6 December 2015 and the signed contract executed between MCW Environmental and Centennial Clarence Pty Ltd.

Where this IEA Report indicates that information has been provided to MCW Environmental by third parties, MCW Environmental has made no independent verification of this information except as expressly stated in the Report. MCW Environmental assumes no liability for any inaccuracies in or omissions to that information.

This IEA Report was prepared between January 2016 and July 2016 and is based on the conditions encountered and information reviewed at the time of the site visit on 11 and 12 January 2016. MCW Environmental disclaims responsibility for any changes that may have occurred after this time.

This IEA Report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This IEA Report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

Except as required by law, no third party may use or rely on this IEA Report unless otherwise agreed by MCW Environmental in writing. Where such agreement is provided, MCW Environmental will provide a letter of reliance to the agreed third party in the form required by MCW Environmental.

To the extent permitted by law, MCW Environmental expressly disclaims and excludes liability for any loss, damage, cost or expenses suffered by any third party relating to or resulting from the use of, or reliance on, any information contained in this IEA Report. MCW Environmental does not admit that any action, liability or claim may exist or be available to any third party.

Except as specifically stated in this section, MCW Environmental does not authorise the use of this IEA Report by any third party.

It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

Any estimates of potential costs which have been provided are presented as estimates only as at the date of the IEA Report. Any cost estimates that have been provided may therefore vary from actual costs at the time of expenditure.



Appendix A

Compliance Tables – Development Consent; Environmental Protection Licence Consolidated Coal Lease and Mining Lease Commitments

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S2- 1	The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	The site maintains a hierarchy of environmental controls which are detailed under individual items throughout this appendix and in the main report. On the 2 July 2015 Clarence recorded an incident where coal materials were released from Reject Emplacement Area (REA) III, through native forests and into the Wollangambe River. This incident was reported to the EPA and other relevant authorities as causing or threatening to cause material harm to the environment and other relevant authorities. The EPA issued two Clean Up Notices, one on the 3 July 2015 and the other on the 18 August 2015. At the time of the audit site inspection clean up and remediation works were continuing and court proceedings were pending. This incident is discussed further in the main section of the report. On the basis of this incident which caused harm to the environment, this condition has been assessed as non-compliant.	Non-compliant
DA 504-00 Development Consent	S2- 2	The Applicant shall carry out the development generally in accordance with the: (a) DA 504/00; (b) EIS title Clarence Colliery - Lease Extension Environmental Impact Statement, dated October 2000; (c) Supplementary Report titled Variation to Development Application no.504-00 and Supplementary Information, dated May 2005; (d) EA Mod 2 (e) EA Mod 3 (f) Statement of Commitments; and (g) Conditions of this consent.	A detailed review of the EIS and Supplementary Report was not conducted as part of this audit. During the audit period two Modifications (MODs) to DA504-00 were granted MOD 2 related to the establishment of REA VI and MOD 3 related to the haulage of coal by road to the west of the Blue Mountains through Lithgow. At the time of the audit, REA VI had been constructed and was being used for reject emplacement in accordance with MOD 2. Clarence was yet to commence trucking coal to the west as permitted by MOD 3. Compliance against individual provisions of Development Consent DA 504-00 and the Statement of Commitments have been assessed with commentary provided against specific items as detailed below. A number of non-compliances with Development Consent DA 504-00 were identified during the audit (refer remainder of report). It is also possible that the operation of REA III at the time of the July 2015 incident may not have been carried out in accordance with DA 504/00 or the EIS. On the basis of the non-compliances with the Development Consent and this condition has been assessed as non-compliant.	Non-compliant See other Conditions in this report
DA 504-00 Development Consent	S2- 3	If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency	Noted	Noted
DA 504-00 Development Consent	S2- 4	The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this consent; and (b) the implementation of any actions or measures contained in these documents.	It was reported that an inspection was undertaken by the new DPE Officer assigned to the site in December 2015. No reports or actions were reportedly provided following that site inspection. Requirements arising from the Annual Environmental Management Report (AEMR) reviews and inspections are discussed under S5-3. Requirements arising from the assessment of strategies, plans and audits are discussed underneath the specific requirement relating to the plan, strategy or audit.	Compliant
DA 504-00 Development Consent	S2- 5	This consent shall lapse of 31 December 2026. Note: Conditions of this consent may require activities to be carried out by the Applicant beyond the period of the approval.	Noted	Noted
DA 504-00 Development Consent	S2- 6	The Applicant shall not extract more than 3 million tonnes of ROM coal per year from the Mine.	The site maintains daily operational monitoring, including coal extraction volumes. The auditors reviewed the Coal Logistics excel workbooks for 2011, 2012, 2013, 2014 and 2015 which include the Clarence Colliery - Production Statistics spreadsheet and indicated that ROM coal extracted did not exceed 3 million tonnes during the audit period. It was reported that the mine planning process accounts for the extraction limit placed by the Development Consent.	Compliant
DA 504-00 Development Consent	S2- 7	The Applicant may transport up to 200,000 tonnes of coal by road per calendar year in total, with a maximum of 100,000 tonnes per calendar year transported to the west, via the Darling Causeway and Great Western Highway haulage route shown in EA Mod 3.	The site maintains daily operational monitoring, including weighbridge records for road haulage servicing the domestic market. The auditors reviewed the Coal Logistics excel workbooks for 2011, 2012, 2013, 2014 and 2015 which include the Clarence Colliery - Domestic Sales (Road) spreadsheet and indicated that annual road haulage did not exceed 200,000 tonnes during the audit period. It was reported that Clarence was yet to commence transporting coal to the west during the audit period.	Compliant
DA 504-00 Development Consent	S2- 7A	Other than via the haulage route shown in EA Mod 3, the Applicant shall not cause any coal truck movements through the City of Lithgow without the prior approval of the Council.	The auditors observed a sign at front gate indicating trucks are not permitted to turn right. It was reported that all truck movements are to Sydney.	Compliant
DA 504-00 Development Consent	S2- 7B	Haulage of coal to the west shall only take place between the hours of 7 am to 10 pm Monday to Saturday and between 8 am to 10 pm on Sunday and public holidays.	It was reported that haulage to the west had not yet commenced during the audit period.	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S2- 8	The Applicant shall ensure that all new buildings, structures, and any alterations to existing buildings and structures are constructed in accordance with the relevant requirements of the BCS. Notes: -Under Part 4A of the EP&A Act, the Application is required to obtain construction and occupation certificates for any building works. -Part 8 of the EP&A Regulation sets out the requirements for the certification of development.	The site advised that no new buildings or structures had been constructed during the audit period.	Not triggered
DA 504-00 Development Consent	S2- 9	The Application shall ensure that all demolition work is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.	The site advised that no demolition works have occurred at the site since 2005 and none were observed by the auditors during inspection of select areas of the site.	Not triggered
DA 504-00 Development Consent	S2- 10	The Application shall: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating any public infrastructure that needs to be relocated as a result of the development.	Public infrastructure that traverses the site includes transmission lines and tracks. The site advised that no damage to public infrastructure has occurred in association with site development and operation.	Not triggered
DA 504-00 Development Consent	S2- 11	The Applicant shall ensure that all plant and equipment at the site, or used in connection with the development, are: (a) maintained in a proper and efficient condition; and (b) operated in as proper and efficient manager.	Refer to EPL Condition O2.1.	Non-compliant Refer to recommendations provided under O2.1.
DA 504-00 Development Consent	S3- 1	Subsidence Impact Assessment Criteria The Applicant shall ensure that surface subsidence generated by the development does not exceed the criteria listed in Table 1. Table 1: Subsidence Impact Assessment Criteria Level of Extraction Subsidence Tilt Horizontal Strain (compressive and tensile) First Workings 20 mm 1.0mm/m 1.0mm/m Partial Extraction 100mm 3.0mm/m 2.0mm/m Note: The first workings and partial extraction areas refer to those areas shown conceptually on Figure 5.6 (revised) of the Supplementary Report, as reproduced in Appendix 2.	The majority of underground mining has met the criteria as defined. The main report provides a detailed assessment of compliance with the Subsidence Impact Assessment. Monitoring data confirms subsidence meets criteria in Table 1, with the exception of: - Measurements for the 609 Panels show that since the underground workings in the area have been flooded, additional subsidence has occurred and in some cases has exceeded 100mm. These areas were mined in 2005, prior to the current Development Consent DA 504-00, under previous subsidence requirements, hence are not considered to represent a non-compliance with the current Development Consent. - a maximum strain reading of 2.6 mm/m at the 700A line. Refer to the main report for further discussion on performance against the Subsidence Impact Assessment.	Compliant
DA 504-00 Development Consent	S3- 2	Before carrying out any underground mining operations that will potentially lead to subsidence of the land surface, the Applicant shall prepare a Subsidence Management Plan for those operations in accordance with the following DRE documents (or the most current and updated versions of these documents): (a) New Approval Process for Management of Coal Mining Subsidence- Policy; and (b) Guideline to the Applications for Subsidence Management Approvals, to the satisfaction of the Secretary of the DRE. In addition to the above each Subsidence Management Plan shall: (a) describe how the subsidence impact assessment criteria will be monitored over time; (b) provide for the notification of relevant authorities, including DRE, SCA and the Secretary in the event of any exceedance of the impact assessment criteria; and (c) detail measures to reduce, mitigate and remediate any impacts. During the preparation of each Subsidence Management Plan the Applicant shall consult with the Department, Council, SCA, EPA, NOW and the CCC, and have regard for any comments provided by these agencies/committees.	<u>Development and Approval</u> Subsidence Management Plans for 800 and 900 Areas sighted. Subsidence Management Approval Applications for these areas are assessed to meet S3-2 requirements. Specific compliance review with selected SMPs for 800 and 900 Areas has been made elsewhere in this spreadsheet. <u>Implementation</u> Evidence: End of Year Reports and 4 Monthly Subsidence Management Status Reports. Discussed in detail in Main Report.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 3	Pollution of Waters Except as may be expressly provided by an Environment Protection Licence, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997 during the carrying out of the development.	Section 120 of the POEO Act relates to the prohibition of pollution of waters, and provides: (1) A person who pollutes any waters is guilty of an offence. (2) In this section: "pollute" waters includes cause or permit any waters to be polluted The auditors interpret this provision to include any significant incidents as well as non-compliance with EPL discharge limits. On the 2 July 2015 Clarence recorded an incident where coal materials were released from Reject Emplacement Area (REA) III, through native forests and into the Wollangambe River. This incident is discussed further in the Main Report. In addition a number of non-compliances with the site's EPL have occurred, as described under EPL L2 below. On the basis of the July 2015 incident this condition has been assessed as non-compliant.	Non-Compliant Refer Main report and EPL L2.4 below
DA 504-00 Development Consent	S3-4	Except as may be expressly provided by an Environment Protection Licence, the Applicant shall ensure that the discharges from any licensed discharge points comply with the limits in Table 2: pH 6.5 - 9.0 (100 percentile limit) Non-filterable residue 120 mg/L (100 percentile limit)	It is the auditor's view that this condition has been superseded by EPL 726 which prescribes water discharge limits analogous to, or more stringent than, the DA 504-00 limits. A number of non-compliances with prescribed EPL limits have occurred, as described under EPL L2 below.	Not Applicable as superseded by EPL requirements. Refer to EPL L2 below
DA 504-00 Development Consent	S3- 5	Water Resource Impact Assessment Criteria The Applicant shall ensure that the development does not result in any: (a) significant inflows to mine workings; (b) reduction in pumping yield in privately owned groundwater bores; (c) reduction in surface flows and groundwater baseflow to upland swamps (Newnes Plateau Shrub Swamps) and wetlands; and (d) reduction in surface flows and groundwater baseflow to waterbodies including Marrangaroo Creek, Farmers Creek, Dargans Creek, Wolgan River, Dumbano Creek, Bungleboori Creek and Wollangambe River (excluding reduction in flows associated with the proposed water transfer scheme), to the satisfaction of the Secretary. Note- Each of these impact assessment criteria must be quantified in the respective sub-plans of the Water Management Plan (See Condition 6 below), to the satisfaction of the Secretary.	A response to this is covered in the Subsidence Audit in the Main Report.	Compliant
DA 504-00 Development Consent	S3- 6	Water Management Plan Within 12 months of the date of this consent, the Applicant shall prepare and subsequently implement a Water Management Plan for the mine in consultation with Council, SCA, EPA, NOW, and to the satisfaction of the Secretary. This plan must be prepared by a qualified hydrogeologist/hydrologist and include: (a) a Water Balance; (b) an Erosion and Sediment Control Plan; (c) Surface Water Monitoring Program; (d) a Ground Water Monitoring Program; and (e) a Surface and Ground Water Response Plan, to address and potential adverse impacts associated with the development. Note: The Water Management Plan may be prepared in a staged manner in accordance with the staging of the development.	The initial development and approval of the Water Management Plan was assessed in the previous IEA by URS in 2011. The Water Management Plan (WMP) was revised and approved by the DPE as required by S3-6A. Refer to S3-6A for discussion of implementation of the revised WMP.	Refer S3-6A below
DA 504-00 Development Consent	S3- 6A	The Applicant shall prepare and implement a revised Water Management Plan for the development, taking into account the construction of Reject Emplacement Area VI and protection of the adjacent Newnes Plateau Hanging Swamp (see Appendix 5), and the relocation of the effluent irrigation area, to the satisfaction of the Secretary. This plan must be prepared in consultation with Council, SCA, EPA and NOW, and be submitted to the Secretary for approval by 31 October 2014.	The Water Management Plan (WMP) was revised and provided to Council, DPI, DTIRIS, EPA, NOW, LCC, OEH and SCC for consultation by letter dated 30.09.14. No comments were reportedly received from these agencies. The DPE provided comments which were incorporated into the Plan and it was resubmitted for approval on the 4.02.14. The WMP was approved by the Secretary by letter dated 16.02.15. A number of changes to water flows (as summarised in the Clarence Water Schematic within the WMP) had occurred since the plan was last revised.	Compliant (preparation)
			<u>Implementation</u> Commitments articulated in the endorsed WMP include: - Site surface water management arrangements, including separation of clean and dirty water, sediment control structures and treatment - Site groundwater management arrangements, including extraction, dewatering and treatment - Implementation of surface water and groundwater monitoring as described in the separate Environmental Monitoring Program - Meteorological monitoring - Reporting of monitoring results through the AEMR (as per DA 504-00 S5-5)	Non-compliant (Implementation)

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
			<p>- Audit and review</p> <p>Commitments of the revised WMP appear to have been generally implemented. The following exceptions are noted:</p> <ul style="list-style-type: none"> - the belt press was not being used to treat fines resulting in coal fines being temporarily stored in the REA III holding cell. Following the incident in July 2015 this practice had ceased and the use of the belt press re-instated in early 2016. - the grit trap was not adequately designed to capture and treat water from the vehicle washdown bay resulting in it not operating effectively. - WTP residues were observed collecting on the surface of Leachate Dam 1 and required removal. Clarence noted these materials used to go to REA III and were rapidly redirected as a result of the EPA Notice to stop works in REA III. The management and disposal of WTP sludge is an ongoing challenge for Clarence. - sand had been deposited and collected behind the silt fence below Leachate Dam 2 and also in drainage structures below REA IV. - the Water Strategy Group which was started in 2009 and includes cross-functional site representatives and external stakeholders with the purpose of identifying long term water management improvements was reported to still be active but had not met since May 2015. <p>During the previous IEA it was reported that Clarence had implemented the following improvement:</p> <ul style="list-style-type: none"> - Diversion of Polishing Lagoon water to a leachate borehole releasing only water treatment plant water through LDP002. <p>During this audit period the site reverted back to releasing the Polishing Lagoon water directly through LDP002. This water was diluted with the much larger volume of treated water from the Water Treatment plant (WTP) ensuring discharge limits were met. Whilst there were minimal exceedances of discharge limits from LDP002 (refer EPL Condition L2.1), this is not considered best practice as the water from the Polishing Lagoon has the potential to be polluted as it receives overflow from the Primary Arrestor which in turn receives all the dirty water from the CHPP and coal stockpiles. Post audit site inspection, it was reported that Clarence plans to direct the polishing lagoon water into the WTP and that this project has commenced with implementation likely in Quarter 3 of 2016.</p> <p>On the basis that coal fines were not being managed as described in the WMP during the audit period, this condition has been assessed as non-compliant.</p> <p>It is noted that Clarence has engaged a consultant to undertake an independent review of onsite surface water management. The Draft report was completed outside of the audit period and as such was only briefly reviewed by the auditors. A comprehensive independent review of the report was not conducted, however the auditors generally support the findings and implementation of the recommendations made.</p>	<p>REC 01 CLR IEA 2016 Implement measures to reduce the risk of pollution / licence exceedances from the Polishing Lagoon. (Post audit site inspection, it was reported that Clarence plans to direct the polishing lagoon water into the WTP and that this project has commenced with implementation likely in Quarter 3 of 2016).</p> <p>REC 02 CLR IEA 2016 Implement at source water pollution controls at the pit top where practicable.</p> <p>REC 03 CLR IEA 2016 Review the design of the grit trap and implement changes to better manage and treat dirty water generated in this area.</p> <p>REC 04 CLR IEA 2016 Investigate options for the long term management and disposal of WTP sludge.</p> <p>REC 05 CLR IEA 2016 Maintain sediment controls and stabilise areas of erosion in the area below Leachate Dam 2 and below REA IV.</p> <p>REC 06 CLR IEA 2016 Revise the WMP to reflect actual on-site water flows and management (e.g. the Clarence Water Schematic) and to reflect findings and responses to the recent assessment of water management at Clarence.</p> <p>REC 07 CLR IEA 2016 Further assess and implement recommendations of the independent review of Clarence's surface water management.</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 6B	The Applicant shall design, construct and operate Reject Emplacement Areas V and VI to ensure that: (a) its commitments in Appendix 3 are implemented; (b) the base of the emplacement is suitably lined to comply with a permeability standard of less than 1x10 ⁻⁹ metres per second over a minimum thickness of 0.5 metres, or equivalent performance; and (c) there are no discharges from the emplacement to surface waters.	REA VI was designed, constructed and operated during the audit period. REA V was yet to be constructed at the time of audit. a) Refer to separate assessment of compliance with Statement of Commitments (SoC) below. b) The base of REA VI was lined with a low permeability clay liner and covered with compacted reject material. The Section 100 documentation (application for the approval of opening a reject emplacement from the DRE), specified that the coarse reject should be compacted to 98% Maximum Dry Density. Aurecon were engaged to conduct a geotechnical investigation to verify the level of compaction achieved within the stockpile. The report concluded that a high level of compaction was achieved. It is noted this report did not specifically look at whether the permeability standards specified by this Condition were being achieved. c) run off from REA VI was directed to Leachate Dam 3.	Not verified REC 08 CLR IEA 2016 Obtain evidence that the base of REA VI achieved the specified permeability standards.
DA 504-00 Development Consent	S3-7	The Water Balance shall: (a) include details of all water extracted, dewatered, transferred, used and/or discharged by the mine; and (b) provide for the annual re-calculation of the water balance and reporting of the review in the AEMR.	The water balance documented within the revised WMP includes the required elements, as reviewed by the auditors. The water balances are reportedly calculated on a monthly basis for internal purposes. The 2014 AEMR reports on consumption of process water and includes a breakdown of the volume of water supplied underground, at the CHPP and at the surface (pit top and administration). The volume discharged is not reported. It was reported that Clarence intends to update the water balance in 2016 and install new water balance software.	Compliant OFI 01 CLR IEA 2016 Include further details of the water balance in the AEMR including volumes of water discharged by the mine
DA 504-00 Development Consent	S3-8	The Erosion and Sediment Control Plan shall: (a) be consistent with the requirements of the Department of Housing's Managing Urban Stormwater: Soils and Construction manual; (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to main the structures of the mine.	The site has developed an Erosion and Sediment Control Plan contained within the revised WMP which includes the required items, as reviewed by the auditors. The plan has been approved by the DPE by letter dated 16.02.15. A separate assessment of consistency against the requirements of the Department of Housing's Managing Urban Stormwater: Soils and Construction manual has not been completed by the auditors. The current sediment and control plan does not include drawing / plan showing the location of erosion and sediment control structures and key water features.	Compliant OFI 02 CLR IEA 2016 Include a drawing / plan showing the location of erosion and sediment control structures and key water features within the next revision of the WMP
DA 504-00 Development Consent	S3- 9	The Surface Water Monitoring Program shall include: (a) detailed baseline data on surface water flows (including ground water baseflows) and quality in waterbodies and wetlands above the mine; (b) surface water impact assessment criteria; (c) a program to monitor surface water flows (including ground water base flows) and quality; and (d) a protocol for the investigation, notification and mitigation of identified exceedances of the surface water impact assessment criteria; and (a) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.	The site has developed a Surface Water Monitoring Program contained within the revised WMP which includes the required items, as reviewed by the auditors. The plan has been approved by the DPE by letter dated 16.02.15.	Compliant
DA 504-00 Development Consent	S3-10	The Groundwater Monitoring Program shall include: (a) detailed baseline data on ground water levels and quality, based on statistical analysis, to benchmark the pro-mining natural variation in ground water levels and quality; (b) ground water impact assessment criteria; (c) a program to monitor the volume and quality of ground water seeping into the underground mine workings; and (d) a program to monitor regional ground water levels and quality in the following geologic formations: (i) Banks Wall Sandstone; (ii) Burra-Moko Head Sandstone; (iii) Caley Formation; and (iv) Katoomba Coal Seam. (e) a protocol for the investigation, notification and mitigation of identified exceedances of the ground water impact assessment criteria.	Groundwater Monitoring program is incorporated within the revised WMP and addresses all of items (a) to (e) of S3-10.	Compliant
DA 504-00 Development Consent	S3- 11	The Surface and Ground Water Response Plan shall include: (a) the procedures that would be followed in the event of any exceedance of the surface or ground water impact assessment criteria, or other identified impact on surface or ground water; and (b) measures to mitigate, remediate and/or compensate any identified impacts.	The revised Water Management Plan includes a Trigger Action Response Plan (TARP) for surface water monitoring and for groundwater monitoring. The TARPs outline the procedures that would be followed in the event of an exceedance of the surface or ground water impact assessment criteria and measures to mitigate or remediate any identified impacts. The WMP was approved by the DPE Secretary by letter dated 16.02.15.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 12	Reporting Each year, the Applicant shall: (a) review the Water Management Plan; (b) update each sub-plan; and (c) report the results of this review in the AEMR, including; (d) the results of monitoring; (e) details of the review for each sub-plan; (t) amendments to the subplans; and (g) details of the measures undertaken/proposed to address any identified issues.	A review of the Water Management Plan was undertaken by the site during 2014 and 2015 to include requirements relating to the construction of REA VI and referred to in the Clarence Colliery 2014 Annual Environmental Management Report (AEMR) (refer S3- 6 above). Monitoring data reported by the site in its 2014 AEMR appears consistent with primary and secondary water quality monitoring records, as reviewed by the auditors (refer EPL below). It was reported that the document control system set up through Lotus Notes notifies responsible personnel via email when plans are due for review. This system was demonstrated to the auditors during the site visit and it was observed that the next planned review of the WMP was due on 20.04.16.	Compliant
DA 504-00 Development Consent	S3- 12A	Biodiversity Offset Strategy By the end of December 2016, the Applicant shall, in consultation with OEH, and to the satisfaction of the Secretary: (a) provide a suitable offset to satisfactorily offset clearing 4.1 hectares of Newnes Plateau Narrow-leaved Peppermint – Silver-top Ash Layered Open Forest and the loss of related biodiversity values, including for threatened species; and (b) make suitable arrangements to manage, protect and provide long-term security in perpetuity for this area, consistent with the relevant NSW Offsets policy.	Centennial has prepared a draft regional biodiversity strategy which would incorporate the requirements of Clarence's offsets. The Strategy reportedly has been prepared in consultation with OEH The Strategy was not reviewed by the auditors.	Not triggered OFI 03 CLR IEA 2016 Verify status of draft regional Biodiversity Strategy & ensure a plan is in place to ensure compliance with this condition prior to end of Dec 2016
DA 504-00 Development Consent	S3- 13	Air Quality – Impact Assessment Criteria The Applicant shall ensure that the air pollution generated by the development does not exceed the criteria listed in Tables 3, 4, and 5 at any privately-owned land. Table 3: Long term impact assessment criteria for particulate matter Table 5: Long term impact assessment criteria for deposited dust Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS 3580.10.1- 1991: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.	URS reviewed primary and secondary dust monitoring records from 2011 to 2015 including 2011, 2012, 2013 and 2014 AEMRs, and monthly monitoring spreadsheets for 2015. Data reviewed identified the following: <u>Total suspended particulate matter (TSP)</u> No exceedances of the annual average criteria were recorded during the audit period. <u>Particulate matter <10µm (PM₁₀)</u> No exceedances of the annual or 24 hour average criteria were recorded during the audit period. <u>Deposited dust</u> No exceedances of the annual average were recorded in 2011-2014. In 2015, Clarence recorded abnormally elevated dust results during the February and March reporting periods. Micro analysis indicated that 10% of the matter was classified as coal particles with 90% attributed to a silica rich mineral dust. The EPA and DPE were notified of the elevated results by emails dated 12.02.15 and upon receipt of the micro analysis by emails dated 26.03.15. The April 2015 dust results returned to the long term averages of around 1 g/m ² /month. The DPE and EPA were provided with this update by email dated 23.04.15. Clarence reported that it suspected these dust gauges may have been tampered with during February and March 2015. Disregarding the abnormal February and March results, the annual average did not exceeded the 4 g/m ² /month at all three dust gauges.	Compliant
DA 504-00 Development Consent	S3- 14	Air Quality Monitoring Program Within 6 months of the date of this consent, the Applicant shall prepare and subsequently implement an Air Quality Monitoring Program for the development, in consultation with EPA, and to the satisfaction of the Secretary. This program must include an air monitoring protocol for evaluating compliance with the air quality criteria in this consent.	The Air Quality Management Program was revised (July 2014) and provided to EPA, LCC, DPI, DRE, OEH and the DPE by letter dated 18.07.14. A letter was received from the EPA dated 23.07.14 stating that it did not intend to review the management program. The plan was reportedly approved by the DPE however the letter approving the Plan was not sighted by the auditors. In addition Centennial has prepared an Air Quality and Greenhouse Gas (AQGHG) Management Plan for the Western Region (January 2016). This plan includes Clarence specific requirements / commitments in Appendix C. The Plan was submitted to the DPE on the 11.02.16. At the time of the audit it was yet to be approved. The AQGHG Management Plan for the Western Region proposes removing TSP monitoring from the long term monitoring network on the basis that TSP can be estimated from PM ₁₀ readings by applying a factor which has been calculated from long term PM ₁₀ and TSP monitoring data. It proposes configuring the PM ₁₀ real time unit to operate continuously rather than for only two months of the year. No changes are proposed to the short term monitoring network which includes real time PM ₁₀ and TSP monitoring. Once approved this regional AQGHG Management Plan will replace the Clarence Air Quality Management Program (July 2014).	Compliant (preparation)
			<u>Implementation</u> The main components of Appendix C include: site specific dust mitigation and management measures; criteria and dust monitoring. Other general commitments made in the front section of the Plan include: reporting; contingency measures; incidents and complaints and exceedances. Air quality monitoring was undertaken in accordance with the Plan during the audit period as discussed in S3-13 above. Reporting of results was included within the AEMRs. Notifications of exceedances to the EPA and DPE were sighted as discussed in S3-13 above. The 2013 and 2014 AEMR discusses control measures implemented during the audit period and these align with the commitments in the Plan. The following were observed during the site inspection:	Compliant (implementation)

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
			<ul style="list-style-type: none"> - sprinkler system running along the haul road that goes past washery from weigh bridge to past coarse reject bin and up centre haul road. This system was reportedly manually turned on and off during dry conditions or if large volumes of truck movements are planned. - a spray bar was installed onto the train loader in mid-2015. This sprays light mist onto coal as it is loaded onto the train. - stockpile pads and roads were being watered using a water cart. <p>Clarence reported that it was in the process of installing a sprinkler system at ROM stockpile which would be used manually as required.</p>	
DA 504-00 Development Consent	S3- 15	<p>Noise Impact Assessment Criteria</p> <p>The Applicant shall ensure that the noise generated by the development, excluding train-loading and rail operations, does not exceed the noise impact assessment criteria presented in Table 6 at any residence on privately owned land.</p> <p>(a) For the purpose of these noise criteria, 5dB(A) must be added to the measured level if the noise is substantially tonal or impulsive in character.</p> <p>(b) The noise criteria do not apply where the Applicant and the affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Secretary and EPA.</p> <p>(c) Noise from the development is to be measured at the most affected point or within the residential boundary/ or at the most affected point within 30 metres of a dwelling (rural situations) when the dwelling is more than 30 metres from the boundary, to determine compliance with the noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the EPA may accept alternative means of determining compliance 'see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.</p> <p>(d) The noise criteria apply under prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:</p> <ul style="list-style-type: none"> -documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions; and -where levels of noise complaints indicate a higher level at impact then actions to quantify and ameliorates any enhanced impacts under temperature inversion conditions shall be developed and implemented. 	<p>Annual noise monitoring to assess compliance with the noise impact assessment criteria was undertaken by environmental consultants SLR at one location approximately 130m northwest of nearest residences. The 2011, 2012, 2013, 2014 and 2015 Noise Compliance Assessment Reports were reviewed by the auditors and indicated compliance during all periods with the following exception.</p> <p>The 2015 noise survey indicated an exceedance of up to 10 dB during the evening and night time period. The major contributor was identified as the tonal reversing alarms on the frontend loaders operating on the stockpiles. It was noted that temperature inversions were present on the night of the noise monitoring which enhanced the noise from the Clarence Colliery. SLR reported that as temperature inversions are not a feature of the area, measurements were considered to be conducted during non-prevailing weather conditions. The report stated that "As a result, it is likely that the mine noise would comply with the consent level during the evening and night-time periods under prevailing atmospheric weather conditions"</p> <p>However, it was recommended that "quacker" type reversing alarms on all onsite mobile equipment be investigated. Clarence reported that it was in the process of undertaking a noise assessment as part of a Statement of Environmental Effects (SEE) for REA V and that this will include a review of mitigation measures (including the use of quacker type reversing alarms) as well as other engineering controls to ensure the noise criteria can be met once REA V is operational.</p> <p>The 2014 and 2015 Noise Compliance Assessments included unattended continuous monitoring. This is a requirement of the EPL (Condition M4.1) however the Noise Compliance Assessment reports do not discuss or comment on the relevance of these results. The Draft Noise Management Plan Western Region does state that: "unattended noise monitoring data is used to assist in estimating site noise contribution at attended noise monitoring location and provide data for assessing long term trends in ambient noise levels".</p>	<p>Compliant</p> <p>OFI 04 CLR IEA 2016</p> <p>Include a brief discussion of the unattended noise monitoring results within the Noise Compliance Assessment reports including their purpose and an interpretation of the results.</p>
DA 504-00 Development Consent	S3- 16	<p>Noise Management Plan</p> <p>Within 6 months of the date of this consent, the Applicant shall prepare and subsequently implement a Noise Management Plan for the development, in consultation with EPA, and to the satisfaction of the Secretary. The plan shall include:</p> <p>(a) a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria;</p> <p>(b) a plan for the management and minimisation of noise emissions associated with train-loading and rail operations, including consideration of all feasible and reasonable noise mitigation measures; and</p> <p>(c) a protocol for the investigation, notification, and mitigation of identified exceedances of the noise impact assessment criteria.</p>	<p>The preparation and approval of the original Environmental Noise Management Program was assessed in the previous IEA. The preparation and implementation of the revised Noise Management Plan is discussed in S3-16A below.</p>	Not triggered
DA 504-00 Development Consent	S3- 16A	<p>The Applicant shall prepare and implement a revised Noise Management Plan for the development, with a particular focus on reducing rail noise, to the satisfaction of the Secretary. This plan must be prepared in consultation with EPA, provide for the implementation of the Applicant's commitments in Appendix 4, and be submitted to the Secretary for approval by 31 October 2014.</p>	<p>The Noise Management Plan was revised and submitted to DPE and EPA by letter dated 30.10.14. An email was received from the DPE dated 4.02.15 requesting the NMP be further revised to address a number of issues. New noise modelling was conducted in 2015 to inform the noise impact assessment for the operation of REA V in rail loop. It was reported that this noise impact assessment was in the process of being finalised at the time of the audit. Once finalised it was reported that it will input into the new Noise Management Plan for the western region which will replace Clarence Noise Management Plan: Western Region. The Draft Noise Management Plan Western Region (January 2016) was sighted by the auditors and noted to include Appendix C which was specific to Clarence Colliery. On the basis that the revised Noise Management Plan has not been approved and the timeframes have not been met, this condition was assessed as non-compliant. It is noted that the Draft Noise Management Plan Western Region (January 2016) was submitted to the DPE post audit site inspection on the 11.02.16 and that approval of this Plan would meet this requirement.</p>	Administrative non-compliance (preparation)

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
			<p><u>Implementation</u></p> <p>The auditors assessed implementation of the Draft Noise Management Plan Western Region as relevant to Clarence. Even though this document was in draft form and was yet to be approved by the DPE it was considered more relevant than assessing implementation with the previously approved plan dated 2006.</p> <p>The main components of Appendix C include: site specific noise mitigation and management measures; rail noise mitigation measures; noise criteria and noise monitoring. Other general commitments made in the front section of the Plan include: reporting; contingency measures; and incidents, complaints and exceedances.</p> <p>Noise monitoring was undertaken in accordance with the Plan during the audit period as discussed in S3-15 above. Reporting of results was included within the AEMRs and EPL Annual Returns.</p> <p>The 2014 AEMR discusses mitigation measures implemented during the audit period and these align with the commitments in the Plan.</p> <p>During the audit period, Centennial received complaints regarding a low-frequency continuous and repetitive pulse type noise suggested to be originating from the Clarence Colliery ventilation fan and/or the Springvale Colliery ventilation fan. In response a series of investigations were undertaken by SLR which suggested the ventilation fans were not the source of the disturbance. In addition Centennial engaged The Acoustic Group to undertake further acoustic investigation into the low frequency noise concerns. The Centennial Low Frequency Noise Report (The Acoustic Group, 5.03.15) was inconclusive and unable to determine the low frequency noise source at the Clarence residence. The report was reviewed by Global Acoustics (letter report dated 4.05.15) who supported the conclusion for additional testing.</p> <p>A response was provided to the two residences and the EPA enclosing the report and committing to further investigation by letter dated 8.05.15. Clarence engaged EMM to undertake a further investigation report. Copies of this report were provided to residences on 29.01.16.</p> <p>In general, the auditors consider Clarence compliant with the requirement to implement the management plan.</p>	Compliant (implementation)
DA 504-00 Development Consent	S3- 17	Meteorological Monitoring Within 6 months of the date of this consent, the Applicant shall establish and subsequently maintain a suitable meteorological station operating in the vicinity of the development in accordance with the requirements in Approved Methods for Sampling of Air Pollutants in New South Wales, and to the satisfaction of the EPA and the Secretary.	<p>The previous IEA assessed the establishment of the meteorological station to the satisfaction of the EPA and Secretary of DPE.</p> <p>The meteorological station was operational during the audit period. It was reportedly maintained by ALS on a quarterly basis with results uploaded into the client data portal. The auditors observed results for 1/03/2012 to Jan 2016. It was reported that prior to 2012 ALS were not operating the meteorological station and therefore data was not available from ALS for this period. This historical data may be available however was difficult to source.</p> <p>An independent review of compliance with the NSW EPA Approved Methods for Sampling of Air Pollutants in New South Wales has not been undertaken as part of this audit.</p>	Compliant
DA 504-00 Development Consent	S3- 18	Traffic & Transport: Road Haulage The Applicant shall ensure that all vehicles loaded with coal leaving the site are covered and remain covered throughout the duration of their journey.	<p>The site maintains a Coal Hauler Induction (sighted (written, video and questionnaire of understanding), which includes as a general rule that:</p> <p><i>"It is the responsibility of the truck driver to ensure that the truck hoist is lowered and the tailgate is closed prior to loading and all loads are covered prior to leaving the site."</i></p> <p>The questionnaire also includes the requirement for trucks to be covered.</p> <p>No vehicle movements were observed from the site during the time of inspection, and as such, implementation of the above procedural controls was not able to be confirmed</p>	Compliant
DA 504-00 Development Consent	S3- 19	The Applicant shall ensure all loaded vehicles leaving the site are cleaned of materials that may fall on the road before they are allowed to leave the site.	<p>The truck wash down bay for the cleaning of loaded vehicle prior to exiting the site was operational during the audit period.</p> <p>The Coal Haulier Induction includes as a general rule that:</p> <p><i>"It is the responsibility of the truck driver to ensure there is no spillage from the vehicle along the roadway. A trimming platform is provided at the loading area to clean any coal from vehicle gunnels."</i></p>	Compliant
DA 504-00 Development Consent	S3- 19A	Use of Wallerawang Power Station Intersection The Applicant shall not utilise the intersection of the Castlereagh Highway and Wallerawang Power Station Haul Road for haulage of coal until the intersection has been upgraded in accordance with Austroads standards, to the satisfaction of RMS.	<p>Clarence was yet to commence haulage of trucks to the west during the audit period hence this condition has not been triggered.</p> <p>It was reported that this intersection is planned to be upgraded in 2016.</p>	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 20	Visual Impact The Applicant shall minimise the visual impacts of the development to the satisfaction of the Secretary.	<p>The topographic setting of the development serves to minimise visual impact when viewed from off-site locations. All structures and buildings were observed by the auditors to be constructed of non-reflective materials in green/brown tones.</p> <p>Reject emplacement areas (REA) are key landscape features within the site. The following REAs were observed during the audit site inspection:</p> <ul style="list-style-type: none"> - REA III: No works were being undertaken following the July 2015 incident (refer to main report). The REA III is large and has some light coloured spoil (placed for future rehabilitation) on top of a dark coal reject base, hence has a high visual impact. No attempts have been made to rehabilitate REA III to reduce the visual impact of REA III. - REA VI: was being used for reject emplacement during the audit. It was reported it would be progressively rehabilitated. Some weeds were observed in the bund wall. - REA IV: Staged rehabilitation commenced in 2014. For REA IV_A topsoil from REA VI was used as a groundcover and this was seeded with native plants. During the audit site inspection a number of weeds were observed within this area. By contrast, REA IV had no topsoil placed on it and it was directly planted with tube stock and minimal weeds were observed in this area although additional planting may be required. Some drainage works were also required in this area. - REA V was approved but was yet to be constructed - REA I and REA II were rehabilitated in the 1990's. <p>The height of emplacement areas is dictated by the High Risk Activity (HRA) application to the mines department and the EIS. The 1993 EIS proposes the final landform elevation of REA IV to be 1074 m (Figure 2.9, page 52). An email from the Mine Surveyor providing final survey heights (dated 08.03.16) indicated the final height of REA IV was 1073m. Given the high visual impacts of REA III and that the rehabilitation of REA III has been delayed through use of the area for coal fines management, this condition is considered as Non-compliant.</p>	<p>Non-compliant</p> <p>REC 09 CLR IEA 2016 Reshape and rehabilitate REA III promptly and effectively with local native vegetation (and in accordance with an approved rehabilitation plan).</p> <p>REC 10 CLR IEA 2016 Undertake improvement works in REA IV including weed control, additional groundcover planting and drainage works. These works should be directed by suitably qualified experts in rehabilitation.</p>
DA 504-00 Development Consent	S3- 21	Lighting Emissions The Applicant shall take all practicable measures to mitigate off-site lighting impacts from the development to the satisfaction of the Secretary.	The topographic setting of the development serves to minimise off-site lighting impacts (refer S3-22 below)	Compliant
DA 504-00 Development Consent	S3- 22	All external lighting associated with the development shall comply with Australian Standard AS4282 (INT) 1995 Control of Obtrusive Effects of Outdoor Lighting.	<p>During the previous IEA it was reported that site commissioned an external compliance assessment which determined that external luminaries at the site do not appear to be having an obtrusive effect pursuant to AS4282. During the audit period additional lighting was installed at REA VI. It could not be determined whether this lighting complies with AS4282.</p> <p>No complaints were received during the audit period relating to lighting emissions.</p>	<p>Not verified</p> <p>REC 11 CLR IEA 2016 Undertake a compliance assessment of the new lighting installed at REA VI with AS4282.</p>
DA 504-00 Development Consent	S3- 23	Greenhouse Gas The Applicant shall: (a) monitor the greenhouse gas emissions generated by the development; (b) investigate ways to reduce greenhouse gas emissions on site; and (c) report on these investigations in the AMER, to the satisfaction of the Secretary.	<p>a) Greenhouse gas emissions are tracked across the Centennial business, including Clarence Colliery, by the corporate head office. This includes energy consumed (electricity, diesel, oil and grease used), electricity produced (coal extracted). From these the Scope 1 and 2 emissions are calculated for reporting under the National Greenhouse Gas and Energy Reporting (NGER) scheme. The monthly greenhouse gas data is provided to the sites for collation and use in their AEMRs (sighted report for January 2015 which included data from July 2014 and year to date totals).</p> <p>b) Centennial Coal has a Climate Change Response Policy (April 2012, available on Centennial website) and sets targets to reduce greenhouse gas emissions at the corporate level. The 'Centennial a Year in Review 2014' publication reported fugitive emissions of methane accounted for 67% of greenhouse gas emissions during 2014, compared to 77% in 2013.</p> <p>Centennial participated in the Federal Government's Energy Efficiency Opportunities (EEO) program which concluded in 2014. Centennial reported that it would continue with the development of a framework based on the EEO process for identifying and assessing energy improvements. The EEO Public Report 2013 reported that the next assessment for Clarence Colliery is scheduled for the first half of 2015 and that a workshop involving relevant site personnel and group sustainability personnel will be held to:</p> <ul style="list-style-type: none"> - Discuss the status and outcomes of opportunities already included in previous reports. - Identify projects that are to be carried forward due to potential for practical application. - Identify additional opportunities and ideas for energy savings. <p>A workshop was not held in 2015.</p> <p>c) A review of the 2014 AEMR found that whilst the AEMR reports on greenhouse gas emissions and includes historical data, it does not discuss investigations to reduce greenhouse gas emissions.</p>	<p>Not verified</p> <p>REC 12 CLR IEA 2016 Investigate ways to reduce greenhouse emissions and report on these in the AEMR</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 24	Waste Minimisation The Applicant shall minimise the amount of waste generated by the development to the satisfaction of the Secretary.	<p>The Clarence Colliery Environmental Management Plan - Waste Management Plan was prepared in 2010 and documented a baseline site waste audit and waste minimisation initiatives. The previous IEA recommended that the Plan include processes to set waste minimisation goals, and measure and report performance against these goals. The Waste Management Plan was reviewed in 2012 and updated to include waste performance targets.</p> <p>The following targets were set:</p> <ul style="list-style-type: none"> - 5% reduction in total waste volumes on a comparative year basis (calculated on a kg of waste per ROM tonne produced) - 10% improvement in recycling rates on a comparative year basis (calculated as a percentage of total waste material). <p>An update on performance in meeting the above targets was provided in the AEMRs which are provided to the Secretary.</p> <p>Waste management on site was undertaken by contractors JR Richards. JR Richards provides monthly waste data in a spreadsheet which includes a breakdown of waste recycled and waste disposed. The spreadsheet is updated monthly so that the December report includes monthly data for the whole year. The Centennial Coal Clarence Waste Management Report for December 2015 and December 2014 were sighted. The reports include a breakdown of waste by type, monthly graphs which include the recycling percentage achieved, a register of identified opportunities for improvements in waste management and a register of waste disposal locations.</p>	Compliant
DA 504-00 Development Consent	S3- 24A	Reject Emplacement The Applicant shall prepare and implement a long term Reject Management Strategy for the project to the satisfaction of the Secretary. This plan must be: (a) prepared in consultation with SCA, EPA and OEH; (b) consider alternatives to reject emplacement, including beneficial re-use and underground disposal; and (c) be submitted to the Secretary for approval by the end of November 2014.	<p>Clarence prepared a Draft Long Term Reject Emplacement Strategy and provided it to the SCA, EPA and OEH for consultation by email dated 12.11.14. The Strategy's preferred long term option was to emplace reject material into the Hansen Quarry. Other options included exploring beneficial reuse opportunities (including use as a road base) and disposal of reject materials underground.</p> <p>The Strategy was provided to the DPE on 27.11.14 and was approved by DPE letter dated 4.02.15. In its letter the DPE requested a progress report on the implementation of the Strategy be provided by 30.11.15 and that all elements of the Strategy be in place by 30.11.16.</p> <p>A progress report on the Long Term Reject Emplacement Strategy was provided to the DPE by letter dated 24.11.15.</p> <p><u>Implementation</u></p> <p>At the time of the audit Clarence was continuing negotiations with the Hansen Quarry. The studies required to support the required Development Application had reportedly commenced.</p> <p>Clarence had also consulted with the Office of Environment and Heritage Sustainability Advantage Program to commence the process of gaining an exemption under the relevant waste legislation so as to use reject material as a road base (as reported in its letter to DPE dated 24.11.15).</p>	Compliant
DA 504-00 Development Consent	S3- 25	Hazards Management Spontaneous Combustion The Applicant shall take the necessary measures to prevent, as far as is practical, spontaneous combustion on the site.	<p>The site has developed the following management tools with relevance to the management of spontaneous combustion:</p> <ul style="list-style-type: none"> - Outburst Major Hazard Management Plan (CL-36 Revision No.3) - Spontaneous Combustion Major Hazard Management Plan (MP-1974 Revision No.2) - Monitoring Arrangements (MP-1368) <p>Fixed sprinklers were observed as being in place above ROM stockpiles, however, a full assessment of the presence and adequacy of site fire protection equipment has not been undertaken by the auditor.</p> <p>During the bushfire in October 2013, Clarence implemented thermal imaging for detecting hot spots in stockpiles. In addition dust suppression sprinkler system and water cannons were deployed continuously for 14 hours prior to the initial fire onto the stockpiles. This action resulted in the coal being quite wet and was believed to have assisted in reducing the likelihood of the stockpile coal being readily ignited by ember attack.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 26	Dangerous Goods The Applicant shall ensure that the storage, handling, and transport of dangerous goods is done in accordance with the relevant Australian Standards, particularly AS 1940 and AS1596, and the Dangerous Goods Code.	<p>During the previous IEA, site commissioned GHD to conduct an external compliance assessment against AS1940:2004 which assessed the site's fuel facilities. The audit identified several improvement actions to bring site fuel and oil storages into compliance with AS1940. The IEA recommended implementation of the corrective actions recommended by GHD. The actions were entered into Pulse and closed out. The auditors sighted the Audit Action Report which outlined the 'Action Details' and 'Completion Details' for a total of 96 Actions. The auditors did not undertake a detailed or independent check of completion of the actions. AECOM conducted an audit of dangerous goods storage on the 31.01.12. The findings of the audit were entered into Pulse and closed out. The auditors sighted the Audit Action Report which outlined the 'Action Details' and the 'Completed Details' for each of the 12 audit findings.</p> <p>An internal audit of dangerous goods stores was conducted in November 2013. The audit included the Main Store and Workshop; Surface Yard, Washery Store, Dozer Shed, Water Treatment Plant, Coal Handling and Preparation Plant, Surface Conveyor, Bathhouse, and Administration Building and included compiling a register of dangerous goods (names and quantities) stored at each location.</p> <p>General housekeeping of dangerous goods storage is included in the weekly inspections carried out by the Environment and Community Coordinator (sighted completed examples 15.06.15).</p> <p>During the audit period (2011/2012), Clarence decommissioned the three diesel underground storage tanks (USTs) located at the pit top and washery areas and replaced them with three self bunded above ground storages. Two of these underground tanks (42,000L) were removed from site (sighted certifying statement by Environmental Contractor ANC Foster dated 5.01.11) and one (90,000L) was solid fill abandoned (sighted certifying statement by ANC Foster dated 5.01.12).</p> <p>Viva conducted an audit of the three above ground diesel fuel stores in March 2015 and made nine recommendations. These were allocated in the Pulse work order system to the Diesel Engineer. Evidence was not available to demonstrate close out of these recommendations.</p> <p>Observations and recommendations relating to the storage and handling of waste oils are provided under EPL O1.1.</p>	<p>Compliant</p> <p>See recommendations relating to the storage and handling of waste oils provided under EPL O1.1.</p>
DA 504-00 Development Consent	S3- 27	Bushfire Management The Applicant shall: (a) ensure that the development is suitably equipped to respond to any fires on-site; and (b) assist the Rural Fire Service and emergency services as much as possible if there is a fire on- site during the development.	<p>In 2010, the site prepared a Bushfire Management Plan (MP-2309 Rev0) which is a framework document describing the site's procedural controls. The Plan was last reviewed and revised in 2015. The review included a risk assessment. Procedural controls as sighted by the auditors included:</p> <ul style="list-style-type: none"> - The Broad brush risk (BBR) assessment includes bushfire - A fire team has been established - Any welding done outside welding bays requires a Hot Work Permit to be issued by the mechanical engineer. The permit requires risk assessments. Also one for underground - Centennial has developed a Standard Work Procedure (SWP) for an Annual Bushfire Prevention Inspection (SWP-2526) - Clarence undertakes monthly firefighting inspections <p>The last bushfire to enter the site occurred in October 2013. The mine was heavily impacted from damage to infrastructure such as electrical cables, communication cables, main underground water pump out line, rail loop sleepers and power distribution boards. In addition considerable damage was made to Clarence monitoring infrastructure on the Newnes Plateau and the rehabilitation effort on REA IV. An overview report was prepared for the Mine Manager which detailed the chronology of events, strengths identified, lessons learned and recommendations. The report stated that the strengths identified by the fire team included, amongst others: available equipment, water cart availability and thermal gun for testing stockpiles.</p> <p>The District Emergency Officer was consulted early in 2013 during Clarence's review of the Bush Fire TARPS and also assisted in the further development of Clarence's Bush Fire Management systems. The day before the fire was expected to impact Clarence, in consultation with the District Emergency Officer it was agreed that Clarence would cease normal operations and prepare to defend the mine operation utilising fire trained employee fire teams. During the fire there was ongoing consultation between Clarence site / Centennial Coal and Emergency Services. There were no injuries or near miss incidents as a result of the fire and all major infrastructure was protected.</p> <p>Fire protection and emergency response specialists were not included with the audit team and an assessment of the adequacy of these elements has not been performed in detail by the auditors. However based on the response to the last bushfire this condition has been assessed as compliant.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S3- 28	Mine Closure Strategy At least 3 years prior to the cessation of mining, the Applicant shall prepare a Mine Closure Strategy for the development, in consultation with Council, DRE, SCA and EPA, and to the satisfaction of the Secretary, The plan must: (a) define the objectives and criteria for mine closure; (b) investigate options for the future use of the site, including the pit top and surface facilities area; (c) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local employment levels; (d) define a strategy for the ongoing management of water inflow to the mine; (a) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development; and (f) describe how the performance of these measures would be monitored over time.	Whilst this requirement was yet to be triggered, Clarence has commenced closure planning by preparing a Conceptual Rehabilitation and Mine Closure Plan (December 2012) for the site. The Plan was prepared by consultants GSS Environmental and addressed CoC requirements a) to c). It is noted in the Plan that requirements d) to f) will be addressed closer to mine closure. The Plan had not been revised since December 2012. Clarence reported that the MOP is the main tool used for rehabilitation.	Not triggered OFI 05 CLR IEA 2016 Revise the Conceptual Rehabilitation and Mine Closure Plan to reflect changes since 2012.
DA 504-00 Development Consent	S3- 29	Rehabilitation Prior to the commencement of construction of Reject Emplacement Areas V or VI, the Applicant shall revise the Mining Operations Plan for the development to include detailed rehabilitation objectives and completion criteria for Reject Emplacement Areas V and VI, to the satisfaction of the Executive Director, Mineral Resources	The MOP was revised to include REA VI and approved by the DRE by letter dated 24.11.14. It was reported that the MOP will be revised again prior to the construction of REA V.	Compliant
DA 504-00 Development Consent	S3- 30	Heritage Management Plan The Applicant shall prepare and implement a Heritage Management Plan for the development to the satisfaction of the Secretary. This Plan must: (d) be prepared in consultation with relevant Aboriginal stakeholders; (e) be submitted to the Secretary for approval prior to 31 October 2014; (f) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site; (g) detail the responsibilities of all stakeholders; and (h) include programs/procedures and management measures for appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site.	Centennial developed a Western Region Aboriginal Cultural Heritage Management Plan (ACHMP) which includes Clarence Colliery. The Plan was prepared in consultation with Aboriginal stakeholders as detailed in Section 1.3 of the Plan (evidence of letters to attend inception meeting and provision of Draft Plan for comment were sighted) and the OEH (comments received on the 29.09.14). The ACHMP was submitted to the DPE on the 2.10.14 and approved by letter dated 23.10.14. The Western Region ACHMP (as reviewed by the auditors) generally addresses the requirements (f), (g) and (h) relating to Aboriginal heritage however non-Aboriginal heritage is not considered in the Plan. It was reported that Centennial was in the process of developing a Regional European Heritage Plan however at the time of the audit this had not been finalised. On the basis that non-Aboriginal heritage is not covered by any management plans this condition has been assessed as non-compliant.	Non-compliant (non-Aboriginal)
			<u>Implementation</u> The main commitments of the ACHMP relate to Aboriginal stakeholder consultation, site surveys, reporting, impact assessment, site assessment, monitoring and management of Aboriginal cultural heritage sites. Evidence of implementation sighted included: - The ACHMP Sub-Committee was established and the first Sub-Committee meeting held on the 28.05.15. - A letter dated 09.07.15 was sent to the relevant Registered Aboriginal Groups discussing due diligence survey participation. The letter committed to inviting all Aboriginal Groups (where feasible) to attend Due Diligence inspections. An Aboriginal Heritage Survey was reportedly done for REA III. - The requirement for monitoring sites of cultural significance in relation to mining operations was not triggered as mining had not occurred in the vicinity of identified sites during the audit period. - The Surface Excavation and Disturbance Permit (PE-1431) includes a question asking if the area is covered by an Aboriginal cultural heritage or European heritage survey. - SMPs cover cultural heritage - Exploration has its own clearance procedure and has own requirements for REFs	Compliant
DA 504-00 Development Consent	S4- 1	Notification of Landowners If the results of monitoring required in schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria in schedule 3, then the Applicant shall notify the Secretary and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the criteria in schedule 3.	In general, no recorded exceedances of impact assessment criteria in Schedule 3 have resulted in potential impact to landholders. Also, as State Forests are the main landholder, there are limited landholders and no or limited private residences directly affected by the operation. There were two months where abnormally high the dust deposition levels were recorded. These were notified to the DPE and EPA however not landowners are they were believed to be outliers (refer also to CoC S3-13). Some minor exceedance of the settlement criteria was identified as discussed in the main report, and at one location a minor exceedance occurred of the strain criteria was observed. No surface impacts were observed and the exceedance was minor. However, on the basis that the Schedule 3 subsidence impact criteria was exceeded on this one occasion and State Forests are the affected landholder, the Auditors consider that State Forests should have been notified pursuant to this condition. It is considered that while the Criteria was marginally exceeded, that no measurable impacts existed relating to the exceedance. On this basis, the auditors have not judged this to be non-compliant. MCW Environmental recommends that any future exceedance of the criteria be notified to Landholders and the DPE as required.	Not triggered OFI 06 CLR IEA 2016 Notification requirements of this and any other relevant condition should be entered into the subsidence TARP within the SMPs. OFI 07 CLR IEA 2016 Ensure that all exceedances of subsidence criteria are notified to landholders and the DPE.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S4- 2	Independent Review If a landowner (excluding mine owned properties) considers that the development is exceeding the impact assessment criteria in schedule 3, then he/she may ask the Applicant in writing for an independent review of the impacts of the development on his/her land. If the Secretary is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Secretary advising that an independent review is warranted: (a) consult with the landowner to determine his/her concerns; (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to determine whether the development is complying with the relevant criteria in schedule 3, and identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and (c) give the Secretary and landowner a copy of the independent review.	Not applicable. The site advised that no such request for Independent Review has been made by a landholder pursuant to this condition	Not triggered
DA 504-00 Development Consent	S5- 1	Environmental Management Strategy Within 12 months of the date of this consent, the Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (a) provide the strategic context for environmental management of the development; (b) identify the statutory requirements that apply to the development; (c) describe in general how the environmental performance of the development would be monitored and managed during the development; (d) describe the procedures that would be implemented to: - keep the local community and relevant agencies informed about the operation and environmental performance of the development; - receive, handle, respond to, and record complaints; - resolve any disputes that may arise during the course of the development; - respond to any non-compliance; - manage cumulative impacts; and - respond to emergencies; and (e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development; and (f) be updated within 3 months of the completion of each Independent Environmental Audit.	<u>Development and Approval</u> The original Environmental Management Strategy (CL-EWP-P-010 Rev0) was developed and approved by the DPE during the previous audit period (URS, 2011 IEA sighted evidence of approval). The EMS was last revised in 2014. The revised Strategy was not submitted to the DPE for approval or for their information and on this basis this condition has been assessed as non-compliant. The revised Strategy generally includes the required items (as applicable). Refer also to the main report for an assessment of the adequacy of the Strategy.	Administrative non-compliance (preparation) REC 13 CLR IEA 2016 Revise the Strategy following completion of this IEA and submit it to the DPE for approval.
			<u>Implementation</u> In general the key aspects of the Strategy were being complied with including: - monitoring was undertaken as discussed elsewhere in this report - CCC was established and operating and minutes of meetings were available on the company website - monthly monitoring reports were available on the website - complaints were being managed as required by the EPL. - Non-compliances were being investigated and exceedances reported to the EPA and DPE (as discussed elsewhere in this report).	Compliant (Implementation)
DA 504-00 Development Consent	S5- 2	Within 14 days of the Secretary's approval for the strategy, the Applicant shall: (a) send copies of the approved strategy to the relevant agencies, Council, and the CCC; and (b) ensure the approved strategy is publicly available during the development.	The original Environmental Management Strategy was provided to the relevant agencies, Council and the CCC as assessed in the previous IEA. The revised 2014 Strategy was not approved by the DPE and was therefore not provided to the relevant agencies, Council and the CCC or put on the website. The website contains the originally approved 2007 Strategy. On the basis that the revised Strategy was not approved this condition has been assessed as not applicable.	Not triggered
DA 504-00 Development Consent	S5- 3	Environmental Monitoring Program Within 12 months of the date of this consent, the Applicant shall prepare an Environmental Monitoring Program for the development in consultation with the relevant agencies, and to the satisfaction of the Secretary. This program must consolidate the various monitoring requirements in schedule 3 of this consent into a single document.	The site developed an Environmental Monitoring Program (CL-EWP-P-050 Rev1), which was approved by the DPE during the previous audit period (evidence sighted by URS in 2011). The Environmental Monitoring Program had not been updated since 2007 and does not reflect changes that have occurred since this time including updates to the EPL. Further assessment of the adequacy of the Environmental Monitoring Program is provided in the main report.	Compliant OFI 08 CLR IEA 2016 Revise the Environmental Monitoring Program to be consistent with current monitoring requirements and the EPL.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S5- 4	Within 3 months of the completion of each Independent Environmental Audit, the Applicant shall review, and if necessary update, the Environmental Monitoring Program to the satisfaction of the Secretary.	The 2010 IEA whilst noting non-compliances with the implementation of the Environmental Monitoring Program did not make any recommendations requiring updating of the program itself. Therefore this requirement was not triggered.	Not triggered
DA 504-00 Development Consent	S5- 5	<p>Reporting Annual Reporting The Applicant shall prepare and submit an AEMR to the Secretary and the relevant agencies. This report must:</p> <p>(a) identify the standards and performance measures that apply to the development;</p> <p>(b) describe the works carried out in the last 12 months;</p> <p>(c) describe the works that will be carried out in the next 12 months;</p> <p>(d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;</p> <p>(e) include a summary of the monitoring results for the development during the past year,</p> <p>(f) include an analysis of these monitoring results against the relevant:</p> <ul style="list-style-type: none"> - impact assessment criteria; - monitoring results from previous years; and - predictions in the EIS; <p>(g) identify any trends in the monitoring results over the life of the development;</p> <p>(h) identify any non-compliance during the previous year; and</p> <p>(i) describe what actions were, or are being taken to ensure compliance.</p>	<p>AEMRs had been prepared for 2011, 2012, 2013 and 2014 and were available on the Clarence website. The 2015 AEMR was completed post site inspection and whilst sighted was not reviewed in detail as part of this audit as its completion and submission was outside of the audit period. The 2014 AEMR was provided to the EPA, DRE, OEH, SCA, LCC, Dam Safety Committee, NPWS and Forests NSW by letter dated 26.02.15.</p> <p>The previous IEA identified that AEMRs did not include reporting of all water discharge monitoring parameters and that generally the AEMRS did not report trending of data over the life of the project e.g. water data.</p> <p>A review of the 2014 AEMR indicated all water discharge monitoring parameters were reported however trending of data over the life of the project was limited to groundwater levels.</p> <p>The EPA inspected the site on the 28.08.13 as part of the AEMR meeting. The EPA advised by letter dated 16.09.13 that on the day of the inspection it was satisfied that the operation of select areas of the premises complied with the conditions of the EPL.</p> <p>The DRE conducted an annual environmental review at Clarence on the 9.04.14 (following receipt of the 2013 AEMR on the 6.03.14). The purpose of the inspection (as stated in the DRE's letter to Clarence dated 16.07.14) was to review compliance with environmental requirements of relevant approval instruments including the Mining Lease and MOP. The inspection included representatives of LSC. The DRE reported that <i>"The presentation and content of the AEMR was completed to a high standard with good explanation of operational and environmental issues. No specific issues were identified in the AEMR during the site inspection."</i></p> <p>The DPE review of the 2014 AEMR (as outlined in its letter dated 02.04.15) found that it is in general accordance with the requirements of CoC S5-5. However it requested that the 2015 AEMR include:</p> <ul style="list-style-type: none"> - A review of the Surface Water Monitoring Program to ensure it includes a program to monitor surface water flows (including ground water base flows) and quality in accordance with Schedule 3, Condition 9 (c). - A summary of complaints section (similar to that of other Centennial operations Annual Reports) in accordance with Schedule 5, Condition 5 (d) of the Approval. - An outline of any reportable incidents in the Annual Report period in accordance with Schedule 5, Condition 5A. <p>A brief review of the 2015 AEMR indicated that discussion on these matters has been included however the auditors have not assessed the adequacy of this in detail or whether the DPE is satisfied with the inclusion as it is considered outside of the audit period.</p> <p>It was reported that the DRE did not conduct an AEMR inspection in 2015 following receipt of the 2014 AEMR. Representatives from the DRE inspected the site on the 2.02.16 however it was reported that this inspection was more focused on REA V rather than a broader AEMR inspection. It was reported that site did not receive a letter from the DRE approving the 2014 AEMR.</p> <p>It was reported that no correspondence was received from the EPA relating to the 2014 AEMR. It was reported that representatives from the EPA have been on site since receipt of the AEMR however these visits related to risk based licensing, conduct of an administrative audit and the July 2015 incident and were not specifically to conduct an AEMR inspection.</p>	<p>Compliant</p> <p>OFI 09 CLR IEA 2016 Request a formal response from the DRE on the 2014 AEMR for Clarence's records.</p> <p>OFI 10 CLR IEA 2016 Ensure requirement (g) to identify any trends in the monitoring results over the life of the development is included with the AEMRs for parameters including air, noise and water.</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S5- 5A	The Applicant shall immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	<p>The Development Consent defines an Incident as a set of circumstances that:</p> <ul style="list-style-type: none"> - causes or threaten to cause material harm to the environment; and/or - breaches or exceeds the limits or performance measures / criteria in this consent. <p>The following incidents causing or threatening material harm occurred during the audit period:</p> <ol style="list-style-type: none"> 1. 2 July 2015::release of coal rejects and fines into Wollangambe River. Reported to DPE by email dated 03.07.15. A formal report was not provided to the DPE within 7 days however the DPE has been informed of the status of clean up actions. Refer to main report for further discussion. 2. 12 April 2012: spill of sludge at the WTP which found its way downstream of LDP002. A letter report was provided to the DPE dated 18.04.12. 3. 23 February 2011: dirty water released from CHPP below Leachate Dam No.2 and entered the hanging swamp. Evidence was not available to demonstrate that this incident was reported to the DPE. <p>A review of a print out of Centennial's Incidents and Enquiries Database (ECD) indicated that Clarence had recorded 13 breaches or exceedances of limits during the audit period. The auditors sighted evidence suggesting that in general, the DPE was notified of these exceedances. There may have been instances historically, where notification was not undertaken or records not retained. The following evidence was sighted for the three exceedances recorded during 2015:</p> <ol style="list-style-type: none"> 1. TSS at LDP002 on 21.04.15. Reported to DPE by email dated 27.04.15. A separate report was not provided however the email included details of the incident. The response email from the DPE dated 27.04.15 did not request any further information. 2. filterable manganese at LDP002 on 2.03.15. Evidence was not available to demonstrate that this exceedance was reported to the DPE. 3. filterable iron at LDP002 on 5.05.15. This was reported to the DPE by email dated 14.05.15. The DPE requested further information which was provided by letter dated 22.05.15. The DPE responded to this by email dated 25.05.15 and requested Clarence take further actions including continue increased frequency (minimum fortnightly) monitoring until it is confirmed the exceedance was an isolated event and engage a suitable specialist to review the available data, site condition and WTP and provide further explanation to the potential cause of the exceedance. A response to this email was provided by letter dated 29.05.15. <p>On the basis that evidence was not available to demonstrate that the DPE was immediately notified of all incidents including exceedances of limits / criteria and provided with a written report within seven days, this condition has been assessed as not verified.</p>	<p>Not verified</p> <p>REC 14 CLR IEA 2016 Ensure records are maintained to demonstrate that the DPE has been immediately notified of all incidents (including exceedances) and provided with a written report within 7 days.</p> <p>REC 15 CLR IEA 2016 Consider revising the Incident Investigation Form to include a prompt for reporting the incident to the DPE.</p> <p>REC 16 CLR IEA 2016 Enter the 2 July 2015 incident into the ECD database. A reference can be included detailing where all of the supporting information can be found.</p>
DA 504-00 Development Consent	S5- 5B	Regular reporting The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent, and to the satisfaction of the Secretary.	<p>The AEMRs are available on the Clarence website and provide an annual update on the environmental performance of the mine.</p> <p>In addition Clarence produces monthly environmental monitoring reports as required under the POEO Act of the monitoring required by its EPL and makes these available on its website.</p> <p>Environmental performance is also discussed in the quarterly CCC meetings the minutes of which are available on the Clarence website.</p>	Compliant
DA 504-00 Development Consent	S5- 6	Independent Environmental Audit Within 5 years of the date of this consent, and every 5 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Secretary; (b) be consistent with ISO 19011:2002 — Guidelines for Quality and/or Environmental Systems Auditing, or updated versions of this guideline; (c) assess the environmental performance of the development, and its effects on the surrounding environment; (d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements; (e) review the adequacy of the Applicants Environmental Management Strategy and Environmental Monitoring Program; and, if necessary, (f) recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.	<p>The previous IEA was undertaken by URS in 2010 and covered the audit period from five years after the date of consent (December 2005-December 2010).</p> <p>MCW Environmental was commissioned by Clarence to undertake this second IEA in December 2015. This IEA covers the audit period 2010-2015. The scope of this IEA is as per the CoC. Refer also to main report.</p> <p>The audit team was approved by the DPE by letter dated 19.11.15.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S5- 7	The Independent Environmental Audit shall include a detailed audit of the subsidence, surface water, and ground water impacts of the development. The audit shall: (a) review the monitoring data for the development; (b) identify any trends in the monitoring data; (c) examine the subsidence, surface water, and ground water impacts of the development; (d) compare these impacts against the relevant impact assessment criteria; and, if necessary, (a) recommend measures to reduce, mitigate, or remediate those impacts If the independent audit determines that the subsidence, surface water, and/or ground water impacts resulting from the underground mining operations are greater than those predicted in the EIS/Supplementary Report or the relevant impact assessment criteria, the Applicant shall: (a) assess the significance of these impacts; (b) investigate measures to minimise these impacts, including modifying subsequent mine plans; and (c) describe what measures would be implemented to reduce, minimise, mitigate or remediate those impacts in the future; to the satisfaction of the Secretary	The previous IEA was conducted by URS in 2010 and included a detailed audit of the subsidence, surface water and groundwater impacts of the mine within the main report. .The audit did not determine that the subsidence impacts were greater than those predicted or the relevant impact assessment criteria. This audit includes a detailed audit of the subsidence, surface water and groundwater impacts of the mine within the main report. Refer to main report for findings.	Compliant
DA 504-00 Development Consent	S5- 8	Within 3 months of commissioning the Independent Environmental Audit, the Applicant shall submit a copy of the audit report to the Secretary, with a response to the recommendations contained in the audit report.	The 2010 IEA was provided to the DPE on 16.03.11 together with an Action Plan addressing the recommendations of the audit report. A letter was received from the DPE dated 21.04.11 stating it accepts the audit report and action plan and requesting Clarence to submit a status report on the implementation of the Action Plan by the 31.01.12. This was provided by letter dated 31.01.12. The letter included a summary table with the Approval and Condition Reference, Recommendation, Responsible Position, Timing for Completion, Action and update on whether Compliant or Action Date. A review of the Status Update indicated the majority of recommendations had been implemented. Where recommendations had not been fully implemented and they are still considered relevant they have been repeated within this IEA.	Compliant
DA 504-00 Development Consent	S5- 9	Community Consultative Committee Within 3 months of the date of this consent, the Applicant shall establish a Community Consultative Committee to oversee the environmental performance of the mine. The CCC shall: (a) be comprised of: • 2 representatives from the Applicant, including the person responsible for environmental management at the mine; • at least 1 representative from Council (if available); and • at least 3 representatives from the local community, whose appointment has been approved by the Secretary in consultation with the Council; (b) be chaired by an independent chairperson, whose appointment has been approved by the Secretary; (c) meet at least twice a year; and (d) review and provide comment on the environmental performance of the development, including any environmental management plans, monitoring results, audit reports, or complaints.	The establishment of the Community Consultative Committee (CCC) was assessed in the previous IEA. The CCC continues to operate and comprise of the required representatives and there were no changes to the previously approved Independent Chair Person. The auditors reviewed selected CCC meeting minutes for the audit period 2011 to 2015 which indicate adherence to prescribed requirements for the operation of the CCC.	Compliant
DA 504-00 Development Consent	S5- 10	The Applicant shall, at its own expense: (a) ensure that 2 of its representatives attend the CCC's meetings; (b) provide the CCC with regular information on the environmental performance and management of the development; (c) provide meeting facilities for the CCC; (d) arrange site inspections for the CCC, if necessary; (e) take minutes of the CCC's meetings; (f) make these minutes available to the public; (g) respond to any comments or recommendations the CCC may have in relation to the environmental management or performance of the development; (h) forward a copy of the minutes of each CCC meeting, and any responses to the CCC's recommendations to the Secretary within a month of acceptance of the minutes by the CCC.	The auditors reviewed a sample of CCC meeting minutes for the period 2011-2015 which indicate adherence to prescribed requirements for the operation of the CCC. CCC members generally undertake a site inspection annually. In 2015, members inspected the area of the July 2015 incident and observed rehabilitation efforts. In 2014 members inspected the REA VI construction area. The CCC meeting minutes were available to the public on the Centennial Clarence website, however they were not being separately provided to the DPE. On this basis this Condition has been assessed as non-compliant.	Administrative non-compliance REC 17 CLR IEA 2016 Ensure a copy of the CCC meeting minutes is provided to the DPE within a month of acceptance of the minutes by the CCC.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent	S5- 11	Access to Information Within 1 month of the approval of any management plan/strategy required under this consent (or any subsequent revision of these management plans strategies), the completion of the independent audits required under this consent, or the completion of the AEMR, the Applicant shall: (a) provide a copy of the relevant document/s to the Council, relevant agencies and the CCC; (b) ensure that a copy of the relevant documents is made publicly available at the mine; and (c) put a copy of the relevant document/s on the Applicant's website, to the satisfaction of the Secretary.	Copies of approved management plans, AEMRs and independent audits were available on the Centennial Coal website at: http://data.centennialcoal.com.au/domino/centennialcoal/cc205.nsf/Published.xsp?site=Clarence&type=Environment Management Plan&date=All However revised and approved plans were not being provided to Council, the relevant agencies and the CCC:	Administrative non-compliance REC 18 CLR IEA 2016 Ensure revised management plans are provided to Council, the relevant agencies and the CCC following approval.
DA 504-00 Development Consent	S5- 12	During the life of the development, the Applicant shall: (a) make a summary of the results of all monitoring required under this consent publicly available both at the mine and on the Applicant's website; and (b) update these results on a regular basis (at least every 3 months), to the satisfaction of the Secretary, Note: The Applicant's environmental management plans/protocols should specify the reporting provisions for each environmental aspect.	Changes to the POEO Act now require holders of EPLs to publish results of monitoring required under the licence on a monthly basis. Clarence was complying with this requirement and monthly environmental monitoring reports were available on its website for the period May 2012 to January 2016. These reports focus on the monitoring requirements of the EPL. Noise monitoring results are included within the AEMRs (also available on the website) as this is undertaken annually. PM10 and TSP monitoring is also included in the AEMRs as the criteria is an annual average even though monitoring for TSP is conducted six monthly.	Compliant OFI 11 CLR IEA 2016 Include results of the six monthly TSP monitoring in the Monthly Environmental Monitoring Report when results become available.
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Construction Phase</i> General REA VI Construction Management	Prior to construction, develop a Construction Environmental Management Plan, incorporating: - construction of REA VI generally in accordance with the design plans contained within Attachment 2 of the Response to Submissions - capacity of the REA V1 will not exceed 390,000m ³ - construction of water management infrastructure as described in Section 7 - REA VI will remain outside of the modelled surface water catchment associated with the Hanging Swamp (as per Figure 1 with this Response to Submissions) - A Construction Groundwater Monitoring Program including the installation of an additional monitoring well used to determine the existing groundwater level - Excavation for the preparation of the proposed REA VI will not occur within 2 metres of the perched water table - Clay lining and compacting the base of REA VI to prevent migration of any leachate seepage into groundwater acquirers - A Construction Noise Management Plan	Clarence developed a Construction Environmental Management Plan (CEMP) dated August 2014 for the construction of REA VI. It was reported that REA VI construction took place in September 2014. Survey results provided by the Surveyor (by email dated 22.02.15) indicate REA VI has not exceeded 390,000m ³ . At the time of the audit site inspection, approximately 58% of the total capacity of REA VI had been placed. It was reported that in order to ensure excavation remained outside of the modelled surface water catchment of the Hanging Swamp, a no go area was established around the entire footprint and training sessions were conducted to inform site personnel of the no go area. Individual trees that were to be protected were also flagged. The CEMP references the site Water Management Plan for surface water and groundwater management. Figure 2 'Excavation Depth Limits' which forms an Appendix to the CEMP) shows four piezometers within the footprint of the REA Clarence Swamp (CS)1, CS2, CS3 and MW05. The August to September 2015 Groundwater Monitoring Report reported that piezometers from CS2 and CS3 were removed in preparation of construction of the REA however results were included and discussed for CS1 and MW05. A 'REAVI Compaction Testing Report' dated 8 January 2016 was prepared by Aurecon to verify the level of compaction achieved within the stockpile. The report estimated that the 98%Maximum Dry Density (MDD) specification was achieved at all locations, below a depth of 0.5 m below ground level and that a high level of compaction was being achieved. The CEMP states that a Construction Noise Management Plan should be prepared prior to the commencement of construction at the site. A Construction Noise Management Plan was not able to be located. -At the time of the audit, construction of REA VI had been completed. No noise complaints were received relating to construction activities at REA VI.	Compliant
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Soil and water management	Manage and treat all leachate from REA VI in accordance with the existing Water Management Plan and additional water management infrastructure included as part of the proposal	A new leachate collection dam was constructed as part of REA VI (Leachate Dam No.3). Leachate is conveyed from this dam via pipeline to Leachate Dam No.2. In the event of high flows, leachate is transferred via pipeline directly to the WTP.	Compliant
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Effluent irrigation	Undertake irrigation in accordance with the Effluent Irrigation Operational Environment Management Plan	An Effluent Irrigation Environmental Management Plan was not prepared. It was reported that at the time of the audit site inspection, Clarence was in the process of relocating the irrigation line.	Non-compliant REC 19 CLR IEA 2016 Prepare and implement an Effluent Irrigation Operational Environment Management Plan

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Water monitoring	Update the Water Management Plan to include monitoring of the additional monitoring well. Undertake surface water and groundwater monitoring in accordance with the updated Water Management Plan	The Water Management Plan was revised in February 2015 and approved by the DPE. The revised Plan does not include monitoring of the additional surface and groundwater monitoring points.	Administrative non-compliance REC 20 CLR IEA 2016 Include discussion of the additional surface and groundwater monitoring requirements in the next revision of the Water Management Plan.
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> TPHSS monitoring	Annually undertake, in summer months, a rapid assessment on established cross-sections within the THPSS Community to monitor the integrity of the swamp	A rapid assessment on the established cross sections within the THPSS Community had not been conducted during the audit period.	Non-compliant REC 21 CLR IEA 2016 Ensure a rapid assessment on the established cross sections within the THPSS Community is undertaken annually in summer months.
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Heritage	Development of a Cultural Heritage Management Plan for Clarence Colliery	Refer to Condition S3- 30.	Non-compliant (non-Aboriginal heritage)
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Traffic and transport	Undertake line marking to delineate the required parking spaces	It was reported that this had not been undertaken as Centennial was waiting for the car parking area to be resurfaced prior to line marking.	Non-compliant REC 22 CLR IEA 2016 Undertake line marking in the car parking area to delineate parking spaces.
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Rail noise and vibration	Development of a Noise Management Plan (within 6 months if approval) which will include the following with regard to train loading operations: - within 3 months of approval and in consultation with Pacific National and Sydney trains, review operational and rail loading practices to reduce noise, including review of the location of relief points and signals on the departure side of the rail loop to minimise idling noise near residential receivers to the satisfaction of the Director General - implementation of acoustical mitigation at receivers as agreed to with relevant property owner for residential receivers labelled R1 to R6 - where acoustical mitigation at receivers is insufficient to meet compliance with relevant noise criteria, negotiated agreements will be pursued with residential receivers labelled R1 to R6 following the process outlined Section 7 and Section 8 of the Industrial Noise Policy	Appendix C of the Draft Noise Management Plan Western Region (January 2016) which was specific to Clarence Colliery was noted to discuss management and minimisation of noise emissions associated with train-loading and rail operations. The Plan states that Clarence consulted with Pacific National and conducted a rail noise mitigation feasibility assessment as outlined in Table 2 of Appendix C of the Plan. The Plan does not specifically discuss the implementation of acoustical mitigation at receivers R1 to R6 however it does commit to complying with the noise criteria at all receivers unless a negotiated agreement has been entered into.	Compliant OFI 12 CLR IEA 2016 Include within Appendix C of the Noise Management Plan Western Region discussion of the implementation of acoustical mitigation at receivers R1 to R6.
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Visual amenity	Undertake rehabilitation of the REA VI in accordance with the conceptual Rehabilitation and Closure plan (2012)	REA VI was still in use and rehabilitation was yet to commence at the time of the audit site inspection.	Not triggered
DA 504-00 Development Consent Appendix 3: Statement of Commitments	<i>Operational Phase</i> Social-economic	Undertake community consultation in accordance with Section 16.4	Section 16.4 of the EIS commits to the following mitigation measures relating to social economic impacts: “- Consultation with residents of Newnes Junction will be undertaken to ensure there are no issues arising from the day to day operation of the Clarence Colliery. - The existing CCC will seek one additional community representative from Newnes Junction to be a member of the Clarence CCC.” It was reported that Newnes Junction residents have been consulted on a number of occasions and that Clarence has sought to include a member however has not received any interest. Clarence reported that it included an additional member from the Clarence community instead.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
1976 Development Consent	1	Approval of building plans	Examples of building plan approvals were sighted during the previous IEA. No new building plans were required in the audit period.	Closed out
1976 Development Consent	2	Properly planned landscaping to be provided	The tools used to plan for landscaping are the Conceptual Rehabilitation and Mine Closure Plan (December 2012) and the Mining Operations Plan (MOP) approved by the DRE in the 24.11.14.	Compliant
1976 Development Consent	3	All conditions outlined in the Environmental Impact Statement are adhered to	The original EIS for the proposed Clarence Colliery prepared in 1975 was not reviewed by the auditors. It was considered that an assessment against this EIS given the age of the document and the time lapsed would be extremely difficult with little benefit.	Not assessed
1976 Development Consent	4	External structures for surface facilities to be constructed so as to blend in with the surrounding bush land	All structures and buildings were observed by the auditors to be constructed of non-reflective materials in green/brown tones.	Compliant
1976 Development Consent	5	Collection dam to be constructed before actual Mine workings begin	Assessed as indeterminate in previous IEA. No further assessment possible.	Closed out
1976 Development Consent	6	That all conditions laid down by the National Parks and Wildlife Services, State Pollution Control Commission, Soil Conservation Department, Planning and Environmental Commission of NSW and Department of Mines must be complied with.	Some non-compliances with Environment Protection Licence No. 726, DA 504-00 Development Consent and other relevant approvals have been identified, as described throughout this audit report.	As noted throughout this audit report
1976 Development Consent	7	Potable water to be of a standard as prescribed by the Health Commission of NSW	Site potable water supply (filtered rainwater) is supplemented with water from the WTP. This water is tested monthly for pH and electrical conductivity (EC). The Australian Drinking Water Guidelines – NHMRC 2011 do not prescribe health-based guideline values for pH and EC. Monitoring data for a broader range of guideline parameters was not available for review, and as such, a full assessment of compliance with this requirement was unable to be performed.	Not verified REC 24 CLR IEA 2016 Develop and implement a monitoring program in accordance with the Australian Drinking Water Guidelines to ensure potable water meets required standards.
1993 Modified Development Consent	1	The applicant shall carry out the development generally in accordance with the 1975 Environmental Impact Statement, prepared by Dames & Moore, except as amended in the Statement of Environmental Effects prepared by R.W. Corkery & Co. dated April, 1993.	The original EIS for the proposed Clarence Colliery prepared in 1975 was not reviewed by the auditors. It was considered that an assessment against this EIS given the age of the document and the time lapsed would be extremely difficult with little benefit.	Not assessed
1993 Modified Development Consent	2	Reject emplacement only to be undertaken in the areas referred to as Reject Emplacement Areas I, II and III in the Statement of Environment Effects prepared by R.W. Corkery & Co date April, 1993.	Reject emplacement has historically occurred in REA I, REA II and REA III. REA IV, REA V and REA VI were approved by Development Consent DA 504-00 and subsequent Modifications. At the time of the audit site inspection the following was observed / noted relating to the REAs: - REA I and REA II had been rehabilitated during the 1990's. - REA III was subject to a stop works order following the July 2015 incident (refer main report), - REA IV: reject emplacement had been largely completed and staged rehabilitation commenced in 2014. - REA V was approved but was yet to be constructed - REA VI: was being used for reject emplacement during the audit.	Compliant
1993 Modified Development Consent	3	All Pit Top Structures to be constructed of non reflective materials of a colour which is compatible with surrounding bushland.	All structures and buildings were observed by the auditors to be constructed of non-reflective materials in green/brown tones.	Compliant
1993 Modified Development Consent	4	The applicant shall prepare, prior to the commencement of site works for REA III, a sediment and erosion control plan. The plan shall incorporate measures for the management of surface runoff, control of water discharge points and the conservation and protection of soil stockpiles. The plan shall be submitted to the Department of Conservation and Land Management (DCLM) for its approval and to Council for its information. All works shall be carried out in accordance with the approved plan.	Assessed as indeterminate in previous IEA. No further assessment possible.	Closed out

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
1993 Modified Development Consent	5	The applicant shall prepare, within Six (6) months of the commencement of operations for REA III, a detailed rehabilitation plan. This plan is to be submitted to the Department of Mineral Resources, Department of Conservation and Land Management and Council for approval.	This condition was assessed as non-compliant in the previous IEA as no detailed rehabilitation plan specific to REA III had been prepared and approved. Since then, Clarence engaged consultants GSS Environmental to prepare a Conceptual Rehabilitation and Mine Closure Plan (December 2012). However since the development of this plan Clarence reported that rehabilitation planning is largely undertaken through the MOP process. The MOP was revised to include REA VI and approved by the DRE by letter dated 24.11.14. At the time of the audit REA III was yet to be rehabilitated. REA III was subject to a stop works order following the July 2015 incident. The auditors consider that REA III should be rehabilitated as a high priority once the stop works notice is lifted.	Non-compliant REC 25 CLR IEA 2016 Reshape and rehabilitate REA III promptly and effectively with local native vegetation (and in accordance with an approved rehabilitation plan) once the stop works order has been lifted.
1993 Modified Development Consent	6	The applicant shall arrange an annual on site meeting, over the life of the project, to inspect the results of rehabilitation works. Representatives from Council, the Department of Conservation and Land Management, National Parks and Wildlife Service and Department of Mineral Resources shall be invited to attend each meeting and the applicant shall adhere to any recommendations made by these representatives. The first annual site meeting shall be undertaken not more than one (1) year after the commencement of operations for REA III.	The site operated an annual AEMR site-based presentation process during the audit period, which included site inspection for regulators.	Compliant
1993 Modified Development Consent	7	The applicant shall obtain from the Environmental Protection Authority all statutory approvals and licences as may be required under the Clean Air Act, 1961, the Clean Waters Act, 1970, and the Noise Control Act, 1975. Such approvals and licences are to be obtained prior to the commencement of works and the development is to be carried out in accordance with the terms of these approvals and licences.	Environment Protection Licence No. 726 is held by the site, as required.	Compliant
1993 Modified Development Consent	8	All water storage structures and leachate dams to be designed and constructed to a standard satisfactory to the Environmental Protection Authority.	Site personnel have advised that no issues have been raised by EPA in relation to inadequacy of design and construction of water storage structures and leachate dams.	Compliant
1993 Modified Development Consent	9	The applicant shall obtain all the necessary approvals from the Department of Mineral Resources.	Clarence has obtained a number of approvals from the DRE as summarised in Table 3 of the MOP. The main approvals include the Consolidated Coal Lease (CCL705) and Mining Leases (ML1353, ML1354 and ML1583). Other approvals include Section 126 and Section 100 approvals of reject emplacement areas and approvals of area specific Subsidence Management Plans and the MOP.	Compliant
1993 Modified Development Consent	10	At the completion of mining and reject emplacement operations, the applicant shall ensure that the site is completely rehabilitated to a standard reflecting its natural state and to be to the satisfaction of Council, the Department of Mineral Resources and the Department of Conservation and Land Management.	This requirement is relevant to REAs I and II. Rehabilitation activities on REA II were completed in 1996, while REA I was rehabilitated in 2002. Clarence commenced a rehabilitation monitoring program in 2012. The latest report for the 2015 annual monitoring (AECOM 05.02.16) gave REA I and REA II an overall rehabilitation rating of 'satisfactory'. A discussion of rehabilitation status and monitoring results is provided within the AEMR. Clarence intends to continue to undertake rehabilitation monitoring and maintenance of REA I and REA II as required.	Not triggered
1994 Northern Lease Extension Area Development Consent	1	The development is to be carried out in accordance with the Environmental Impact Statement prepared by RW Corkery and Co Pty Ltd, date November 1993, except as may be specified or amended by the following conditions.	Not assessed.	Not assessed
1994 Northern Lease Extension Area Development Consent	2	The south-eastern section of the Northern Extension is to be limited to "first workings" only. Any appropriate protection zones to safeguard surface features shall be determined when the company applies to the Department of Mineral Resources for approval to extract pillars or mine by longwall method in accordance with Section 138 of the Coal Mines Regulation Act.	Site indicated that First workings only have occurred in the south-eastern section of Northern Extension. The activity was not conducted within the audit period and hence was not fully verified.	Not assessed

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
1994 Northern Lease Extension Area Development Consent	3	The applicant shall prepare, in consultation with the National Parks and Wildlife Service, a monitoring plan for the four Newnes Plateau Shrub Swamps located within the Northern Extension. The plan will measure the impacts, following subsidence, of changes to water levels, plant presence, abundance, structure and animal presence. Monitoring will include amphibians, reptiles, birds and mammals, with special emphasis on the Blue Mountains Water Skink and rare plants. Monitoring will include any appropriate comparisons with swamp areas not subject to longwall mining and shall be undertaken for a period of at least 5 years.	A specific Flora and Fauna Monitoring Plan has not been developed in consultation with the NPWS. Instead, flora and fauna monitoring is outlined in the area specific SMP Environmental Monitoring Programs. Evidence of the implementation of flora and fauna monitoring of the Newnes Plateau was sighted. Centennial commissioned consultants to conduct seasonal vegetation monitoring on the Newnes Plateau across its three western mines (Angus Place, Springvale and Clarence). The auditors sighted the 2011 Annual Flora Monitoring Report (University of Queensland) and the 2014 Spring and Annual Report (Gingra Ecological Surveys) These included species richness and composition monitoring within 20m x 20 m plots at 10 sites for Clarence. Fauna monitoring was undertaken by Biodiversity Monitoring Services and was reported in the 2014 AEMR to have been undertaken in the 700 Area (Eastern, Western and Outbye), 800 Area (Eastern portion) and the 900 Area. The auditors sighted examples of monitoring reports for the Western SMP areas (2011 Annual Fauna Monitoring Report by Biodiversity Monitoring Services) and the 900 SMP area (Fauna Monitoring Program Panels 913 and 917 2014). A variety of survey techniques were employed to target small mammals (including bats), reptiles, birds and amphibians. Targeted searches were conducted for threatened species such as the Blue Mountains Water Skink and the Giant Dragonfly.	Administrative non-compliance REC 26 CLR IEA 2016 Update the Environmental Monitoring Program to include details of the flora and fauna monitoring undertaken and provide to the NPWS for consultation.
1994 Northern Lease Extension Area Development Consent	4	The applicant shall prepare a contingency plan to re-establish the rare plant Notochloe microdon, Boronia deanei and Celmisia longifolia prior to longwall mining beneath the Newnes Plateau Shrub Swamps. The plan shall be implemented if existing populations decline. Details are to be provided to the NPWS.	Not triggered. Longwall mining has not occurred under the Newnes Plateau Shrub Swamps.	Not triggered
1994 Northern Lease Extension Area Development Consent	5	The applicant shall inform the National Parks and Wildlife Service of the results of subsidence monitoring prior to commencement of longwall mining under the Mount Horne Aboriginal sites. The likely impacts of longwall mining on these sites, and any appropriate mitigative measures or protection zones, are to be fully assessed when the applicant applies to the Department of Mineral Resources for approval to extract pillars or mine by longwall method in accordance with Section 138 of the Coal Mines Regulation Act, 1982.	Not triggered. Longwall mining has not occurred under the Mount Horne Aboriginal sites.	Not triggered
1994 Northern Lease Extension Area Development Consent	6	All water storage structures and leachate dams are to be designed and constructed to the satisfaction of the Environment Protection Authority.	Refer 1993 Modified Development Consent condition 8.	Compliant
1994 Northern Lease Extension Area Development Consent	7	The applicant shall obtain from the Environment Protection Authority all statutory approvals and licences as may be required under the Clean Air Act, 1961, the Clean Waters Act, 1970, and the Noise Control Act, 1975. Such approvals and licences shall be obtained, or incorporated into existing approvals, prior to the commencement of works or extension to existing facilities.	Refer 1993 Modified Development Consent condition 7.	Compliant
1994 Northern Lease Extension Area Development Consent	8	The applicant shall provide to the National Parks and Wildlife Service details of Pit Top water monitoring results as supplied to the Environment Protection Authority under the Clean Water Act.	Pit top water monitoring results are provided to the EPA as the responsible authority through EPL Annual Returns NPWS are provided with a copy of AEMR which includes an annual summary and discussion of water monitoring results. In addition, as required by the POEO Act, EPL monitoring results are published on the Centennial Clarence website on a monthly basis.	Compliant
1994 Northern Lease Extension Area Development Consent	9	The applicant shall consult with the Soil Conservation Service during topsoil stripping and stockpiling associated with Reject Emplacement Areas IV and V.	REA V was yet to be constructed at the time of the audit. REA IV had been constructed and used to capacity and was in the process of being rehabilitated during the audit period. It was reported that the Soil Conservation Service was not consulted during soil stripping and stockpiling. It is noted that since this approval was granted in 1994, the Soil Conservation Service has undergone changes and is now a commercial entity within the Department of Primary Industries providing environmental consulting services. It is not clear whether consultation with the Soil Conservation Service is still considered relevant. On this basis, this Condition has been assessed as not verified. Topsoil stripping and stockpiling are discussed in the MOP which was approved by the DRE.	Not verified REC 27 CLR IEA 2016 Confirm with the DPE whether consultation with the Soil Conservation Service is required during topsoil stripping and stockpiling associated with REA V.
1994 Northern Lease Extension Area Development Consent	10	The applicant shall consult with the Soil Conservation Service prior to the construction of runoff diversion and erosion and sediment control works. Such works are to be constructed to the satisfaction of the Soil Conservation Service.	Assessed as indeterminate in previous IEA. No further assessment of historical compliance possible.	Closed out

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
1994 Northern Lease Extension Area Development Consent	11	The applicant shall prepare, within 6 months of the commencement of operations for Reject Emplacement Area IV and Reject Emplacement Area V respectively, a detailed rehabilitation plan for each area. This plan is to be submitted to the Department of Mineral Resources, the Soil Conservation Service and Council for approval.	REA IV had been constructed and used to capacity and was in the process of being rehabilitated during the audit period. A detailed rehabilitation plan was not prepared and approved by the DRE, Soil Conservation Service and Council within 6 months of commencement of operations of REA IV. On this basis, this Condition has been assessed as non-compliant. REA V was yet to be constructed during the audit period.	Non-compliant REC 28 CLR IEA 2016 Develop a detailed rehabilitation plan within 6 months of the commencement of REA V and submit to the DRE, Soil Conservation Service and Council for approval.
1994 Northern Lease Extension Area Development Consent	12	The applicant shall consult with the Soil Conservation Service in respect of the progressive and final rehabilitation of Reject Emplacement Areas IV and V. Rehabilitation of these areas is to be undertaken to the satisfaction of the Soil Conservation Service, the Department of Mineral Resources and Council.	REA IV was in the process of being rehabilitated during the audit period. The Soil Conservation Service had not been consulted with regarding the progressive rehabilitation of REA IV. As stated above it is not clear whether consultation with the Soil Conservation Service is still considered relevant and on this basis, this Condition has been assessed as not verified. REA V was yet to be constructed during the audit period.	Not verified REC 29 CLR IEA 2016 Confirm with the DPE whether consultation with the Soil Conservation Service is required regarding the progressive rehabilitation of REA IV and REA V.
Environment Protection Licence 726	A1.1	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee based activity classification and the scale of the operation. Scheduled Activity - Coal works - Mining for coal Fee Based Activity Scale - Coal works > 2,000,000 – 5,000,000 T handled - Mining for coal > 2,000,000 – 3,500,000 T produced	The site maintains daily operational monitoring, including coal extraction volumes. The auditors reviewed the Coal Logistics excel workbooks for 2011, 2012, 2013, 2014 and 2015 which include the Clarence Colliery - Production Statistics spreadsheet and indicated that ROM coal extracted did not exceed 3 million tonnes during the audit period. It was reported that the mine planning process accounts for the extraction	Compliant
Environment Protection Licence 726	A2.1	The licence applies to the following premises: Premises Details CLARENCE COLLIERY OFF BELLS LINE OF ROAD NEWNES JUNCTION, NSW 2790 CCL705, ML 1353 , ML1354 & ML1583	Noted.	Noted
Environment Protection Licence 726	A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	The previous IEA reported that site does not hold a copy of its original EPL Application and recommended that a copy is obtained. This was not actioned and is still considered relevant.	Not verified REC 30 CLR IEA 2016 Obtain a copy of the Original EPL Application and ensure compliance with the application.
Environment Protection Licence 726	A3.2	Any other document and/or management plan is not to be taken as part of the documentation in condition A3.1, other than those documents and/or management plans specifically referenced in this licence.	Note	Note
Environment Protection Licence 726	L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	Section 120 of the POEO Act relates to the prohibition of pollution of waters, and provides: (1) A person who pollutes any waters is guilty of an offence. (2) In this section: "pollute" waters includes cause or permit any waters to be polluted The auditors interpret this provision to mean non-compliance with EPL discharge limits, amongst other potential actions. On the 2 July 2015 part of the eastern wall of REA III failed resulting in the release of both coarse reject and liquid coal fines into the Wollongambe River. This incident is discussed further in the Main Report. In addition a number of non-compliances with the pollution concentration limits specified by Condition L2.1/2.4 have occurred, as described under EPL L2.1 below. On the basis of the July 2015 incident this condition has been assessed as non-compliant.	Non-Compliant (refer main report and L2.4)

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	L2.1 / L2.4	For each monitoring/discharge point or utilisation area specified in the table below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	<p>The auditors reviewed the Annual Returns and select source data for the period 2013-2015. A brief review of the 2012 and 2011 Annual Returns also noted exceedances of discharge limits, however these were not assessed in detail.</p> <p><u>2015</u></p> <p>In its 2015 Annual Return Clarence reported the following non-compliance with Condition L2.4 of its EPL:</p> <ul style="list-style-type: none"> - exceedance of filterable manganese limit at LDP002 on the 2.03.15 caused by a power outage which resulted in inadequate treatment at the WTP. In response, Clarence installed an in-line real time manganese probe to provide continuous feedback on water treatment. - exceedance of TSS level (30 mg/L) at LDP002 (103 mg/L recorded) on the 21.04.15. This was caused by a significant rainfall event which exceeded the capacity of the dirty water management system. - exceedance of filterable iron limit at LDP002 on the 05.05.15. This was caused by a malfunction within the Dissolved Air Flotation (DAF) unit of the WTP causing inadequate treatment of iron. In response Clarence installed real time, continuous monitoring equipment at the WTP to provide continuous feedback on the functionality of the plant. <p>The auditors reviewed the ALS monitoring report provided as an MS Excel workbook for the month of December 2015 which included a summary of the discharge monitoring results at LDP002 in a separate worksheet for the whole year ('ldp002 database') and confirmed that the exceedances correlated with what was reported by Clarence in its Annual Return. A random check of other months was also conducted. (March, April and July 2015) and no discrepancies with what was reported identified for those months.</p> <p><u>2014</u></p> <p>The auditors reviewed the ALS monitoring report for the month of December 2014. The review of the 'ldp002 database' which included the data for the 2014 calendar year, indicated one instance on the 13.11.14 where the recorded arsenic level (0.06 mg/L) was above the limit (0.01 mg/L). This exceedance was not reported as it related to a non-routine sample and was missed during the review of the monthly monitoring results.</p> <p>All other pollutants were within the limits prescribed in the EPL.</p> <p><u>2013</u></p> <p>The auditors reviewed a spreadsheet titled '2013 Clarence Annual Return Results 'which was compiled by the Clarence Environment and Community Coordinator from the monthly ALS reports. The review indicated the following exceedances of pollutant limits:</p> <ul style="list-style-type: none"> - pH of 6.44 (beneath the lower limit of 6.5) recorded in the 5.03.13. The lower pH limit was subsequently revised in the EPL to be 6.0. - filterable manganese level of 0.593 mg/L recorded on the 21.10.13 exceeding the limit of 0.5 mg/L 	Non-compliant
Environment Protection Licence 726	L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.	Noted. The specified percentage for pH is as per all of the other pollutants - 100 percentile. Compliance with the limits is discussed in L2.1 above.	Noted
Environment Protection Licence 726	L2.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.	Noted	Noted
Environment Protection Licence 726	L2.5	The concentration limits stipulated by condition L2.1/L2.4 for EPA identification points 1, 3 and 4 are deemed not to apply when the discharge from the stormwater control structures occurs solely as a result of rainfall measured at the premises which exceeds: a) a total of 56 millimetres of rainfall over any consecutive 5 day period. Note: A 56mm rainfall event is defined by the EPA endorsed publication "Managing urban stormwater: soils and construction" (Landcom 2004) as the rainfall depth in millimetres for a 95th percentile 5 day rainfall event for Sydney/Blue Mountains which is also consistent with the storage capacity (recommended minimum design criteria) for Type D sediment basins for mines and quarries (see "Managing urban stormwater: soils and construction, Volume 2E, mines and quarries" (DECC, 2008)).	This Condition was included in the EPL by variation issued 12.06.14. Since this time, there have not been any discharges from LD001, LD003 or LD004.	Not triggered
Environment Protection Licence 726	L3.1	For each discharge point or utilisation area specified below (by a point number), the volume/mass of: (a) liquids discharged to water; or; (b) solids or liquids applied to the area; must not exceed the volume/mass limit specified for that discharge point/ area: Point 2: 25000kilolitres per day Note: The total volume discharged from point 2 may exceed 25,000 kL/day on any day where greater than 10 mm of rainfall is recorded at the premises, for that day.	<p>The auditors reviewed the MS Excel workbook 'LDP2 Volume Discharge' which included the daily discharge volumes for the period 1.01.13 to 29.02.16. A review of this data indicated two instances in 2015 (20 and 21 April) where the 25,000 kL/day limit was exceeded. The auditors reviewed the 15 minute meteorological station data for 2015 and confirmed that both these instances followed rainfall events greater than 10 mm (65.6mm and 40.4 mm respectively) and therefore these were not considered non-compliances.</p> <p>There were also five instances in 2013 where the limit was exceeded. A review of the rainfall data for these dates indicated four of these exceedances correlated with rainfall events however one exceedance on the 21.06.13 (26,962 kL/day recorded) did not. This was not reported as a non-compliance in the Annual Return.</p>	Non-compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations								
Environment Protection Licence 726	L4.1	<p>Waste</p> <p>The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below. Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below. Waste: General or Specific exempted waste: Description: Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the POEO (Waste) Regulation 2005. Activity: As specified in each particular resource recovery exemption. Other Limits: N/A</p>	It was reported that no waste was received at the premises. No evidence was observed during the site inspection to suggest that was being received at the premises.	Compliant								
Environment Protection Licence 726	L5.1	<p>Noise limits</p> <p>Noise generated from the premises, excluding train loading and rail operations, must not exceed the noise limits specified in the table below.</p> <table><tr><th>Location</th><th>Day (LAeq 15 min)</th><th>Evening (LAeq 15 min)</th><th>Night (LAeq 15 min)</th></tr><tr><td>Any residence on privately owned land not subject to an agreement with the licensee</td><td>38</td><td>36</td><td>35</td></tr></table> <p>For the purposes of condition 5.1:</p> <p>a) Day is defined as:</p> <p>i. the period from 7am to 6pm Monday to Saturday; and</p> <p>ii. the period from 8am to 6pm Sundays and Public Holidays.</p> <p>b) Evening is defined as: the period from 6pm to 10pm.</p> <p>c) Night is defined as:</p> <p>i. the period from 10pm to 7am Monday to Saturday; and</p> <p>ii. the period from 10pm to 8am Sundays and Public Holidays.</p> <p>d) The morning shoulder period is a subset of the night period between 6am to 7am Monday to Saturday.</p>	Location	Day (LAeq 15 min)	Evening (LAeq 15 min)	Night (LAeq 15 min)	Any residence on privately owned land not subject to an agreement with the licensee	38	36	35	Refer S3-15	Compliant
Location	Day (LAeq 15 min)	Evening (LAeq 15 min)	Night (LAeq 15 min)									
Any residence on privately owned land not subject to an agreement with the licensee	38	36	35									
Environment Protection Licence 726	L5.2	To determine compliance with condition L5.1, noise from the premises is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the residence where the residence is more than 30 metres from the residential boundary to determine compliance with the noise levels in condition L5.1	Refer S3-15	Compliant								
Environment Protection Licence 726	L5.3	To determine compliance with condition L5.1, the modification factors in Section 4 of the NSW Industrial Noise Policy (EPA, 2000/2001) must be applied, as appropriate, to the noise levels measured by any monitoring equipment.	Noted. Modification factors were not required to be applied	Noted								
Environment Protection Licence 726	L5.4	The noise limits stipulated by condition L5.1 apply under all meteorological conditions except for the following:	Noted. Refer S3-15 for instances where noise limit was considered not to apply due to temperature inversion.	Noted								
		a) wind speeds greater than 3 metres per second at ground level; and										
		b) temperature inversions as outlined in Section 5 of the NSW Industrial Noise Policy (EPA, 2000/2001).										

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	<p>The incident on the 2 July 2015 where coarse and fine coal rejects were discharged from the site and into the Wollangambe River was caused by the overtopping of a temporary coal fines holding cell on REA III, resulting in bridging of the leachate drain. It is considered that at the time of the incident, the treatment, storage and disposal of coal fines was not being carried out in a competent manner.</p> <p>Observations of the pit top area also indicated areas where the handling and storage of materials and waste required improvement, specifically:</p> <ul style="list-style-type: none"> - the grit trap and primary arrestor were not operating as designed and did not have the freeboard to act as effective sediment basins. Sediment (mostly coal) was observed to be overtopping the grit trap. It was also difficult to access the grit trap to clean out. - the grit trap was not designed to capture and treat water from the vehicle washdown bay which contributed to its operating capacity. - minor spills were observed across the pit top. In particular the area near the drum crusher and waste drum bin had oily residues released to land. - one of the pipes from the primary arrestor was observed to be full of sediment - oil and grease store was not bunded (it is noted that most of the drums stored here were new and unopened drums on wooden pallets) - bulk diesel fuel tank bowser was not bunded and some minor spills were observed near the refuelling area. <p>As discussed under DA 504-11 S3-6A, Clarence commissioned an independent review of its surface water management. The Draft report was completed outside of the audit period and as such was only briefly reviewed by the auditors. A comprehensive independent review of the report was not conducted, however the auditors support the further investigation of improved water management approaches to reduce compliance risks, and support the implementation of further actions to improve water management performance. Refer also to DA 504-00 S3-26 for assessment of storage, handling and transport of dangerous goods.</p>	<p>Non-compliant</p> <p>REC 31 CLR IEA 2016 Undertake general housekeeping of the pit top, including cleaning up of minor spills, ensuring stores are appropriately bunded, cleaning out traps and pits.</p> <p>Refer also to recommendations under DA504-00 S3-6A</p>
Environment Protection Licence 726	O2.1	<p>All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.</p> <p>Note: Plant is defined in the Dictionary. The type of plant and equipment that should be considered includes, but is not limited to, drainage systems; infrastructure and pollution control equipment such as (but not limited to) spill containment and clean-up equipment; dust screens and collectors; sediment collection systems, traps and sumps; waste collection, storage and disposal equipment.</p>	<p>The site maintains an Electrical Engineering Management Plan (MP-1913, Rev2, 30.08.10) and a Mechanical Engineering Management Plan (CL-MS-001-P-017 Rev1 1.10.11).</p> <p>It was reported that there were plans to review the Electrical Engineering Management Plan in 2016.</p> <p>The site's Mechanical Engineering Management Plan indicates a planned review date of October 2014. It appears that this planned review has yet to occur or be finalised.</p> <p>Examples of Maintenance Work Orders generated from the Centennial Coal Pulse Maintenance System were sighted by the auditors including the maintenance schedule for the Water Treatment Plant (WTP) and the Daily Inspection WTP Operational Checklist. The day to day operation of the site's water treatment plant (WTP) was undertaken by electrical contractors Ampletech. Remote monitoring and operational support was provided by Total Air Pollution Control (TAPC - formerly EGL) who designed and installed the plant over 10 years ago. The efficiency of the operation of the WTP can be remotely checked using SCADA.</p> <p>Responsibility for the operation of the train loader was recently handed over from the pit electricians to the CHPP. It was reported that CHPP personnel underwent rigorous training prior to taking over operational duties.</p> <p>For contracted plant and equipment (including dozers, loaders and trucks), contractors (Henry's) reportedly have their own services books and schedule which is overseen by the CHPP engineering coordinators.</p> <p>Spill containment and clean-up equipment was maintained by waste contractor JR Richards during fortnightly inspections.</p> <p>The meteorological station was reportedly maintained by ALS on a quarterly basis. ALS also reportedly calibrated the flow meter at LDP002 on a quarterly basis.</p> <p>The Monthly Environment Inspection and Weekly Environment Inspection undertaken by the Environment and Community Coordinator includes a check of water management structures (e.g. drainage lines, pipelines, discharge structures, pit top grit trap, polishing lagoon, primary arrestor and leachate dams) (sighted completed examples dated 1.06.15 and 15.06.15). Based on these inspections, the Coordinator organises maintenance of the water management structures as required.</p> <p>It was reported that Clarence was planning to de-silt the polishing lagoon and dredge Leachate Dam 1 in the near future. The grit trap (one side) and the settling pond off the WTP were reportedly cleaned approximately 3-4 weeks prior to the site inspection. The primary arrestor was reportedly last de-silted in late 2015. Maintenance of the small sumps beneath the conveyors was undertaken by Henry's.</p> <p>An oil water separator was observed on site which had reportedly not been operational for a number of years. Clarence stated that the Oil and water separator will be removed as it is not functional. Clarence consider that there is a low risk of oil and grease exceedance given history of discharge with no exceedances.</p> <p>As discussed under O1.1 above, during the site inspection the pit top area was noted to require further maintenance and general housekeeping.</p> <p>Given the note in the condition defines the "plant and equipment" that should be considered as including sumps and sediment control systems, it is considered that the July 2015 spill is potentially relevant to this condition. On the basis that there is outstanding regulatory action by the EPA in relation to this event (not considered in this audit) potentially relevant to this condition, auditors assessed this condition as being Not Verified.</p>	<p>Non Verified</p> <p>REC 32 CLR IEA 2016 Consider whether an oil water separator is required to manage wastewater from the washdown bay.</p> <p>REC 33 CLR IEA 2016 Review and update the Electrical Engineering Management Plan and Mechanical Engineering Management Plan</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	O3.1	Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Conditions during the site inspection were hot and dry. Significant dust emissions were not observed during the site inspection. Control measures were sighted including use of water carts and sprinkler systems.	Compliant
Environment Protection Licence 726	O3.2	All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Conditions during the site inspection were hot and dry. Significant dust emissions were not observed during the site inspection. Control measures were sighted including use of water carts and sprinkler systems. It was reported that a road sweeper was used to sweep the pit top area on a monthly basis.	Compliant
Environment Protection Licence 726	O3.3	Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.	The site maintains a coal hauler induction (written, video and questionnaire of understanding), which describes general rules requiring all loads to be covered prior to leaving site and driver responsibilities to ensure no spillage. No vehicle movements were observed from the site during the time of inspection, and as such, implementation of the above procedural controls was not able to be confirmed	Compliant
Environment Protection Licence 726	O4.1	The stormwater control structures identified at EPA identification points 1, 3 and 4 must be drained or pumped out as necessary to maintain each structures design storage capacity within 5 days following rainfall.	EPA Point 1 at the vent fan site was observed during the audit site inspection. It was not well defined and it was difficult to determine where the actual discharge and monitoring Point was as it was located on flat land with no weir structure. Flow from this area would be surface runoff. EPA Point 3 is the overflow from leachate dam 1. It was reported this Point continuously drains via gravity pipeline to underground workings and that Clarence does not actively pump out this point. EPA Point 4 is the overflow from leachate dam 2 and also drains to the underground workings via gravity.	Compliant OFI 13 CLR IEA 2016 Undertake a review to determine whether EPA Point 1 is required and if not seek to remove it from the Licence. If the review determines it is a relevant Discharge Point then seek to better define it both within the description in the EPL and physically on site (i.e. with signage and a better established discharge and monitoring point).
Environment Protection Licence 726	O4.2	The licensee must undertake maintenance as necessary to desilt any stormwater control structure identified at EPA identification points 1, 3 and 4 in order to retain each structures design storage capacity.	As stated above, EPA Point 1 is at the vent fan site. There are no stormwater control structures at this site. EPA Point 3 (overflow from Leachate Dam 1): It was reported Leachate Dam 1 was last de-silted in 2012/2013 and that there were plans to de-silt it in the next few months. EPA Point 4 (overflow from Leachate Dam 2). Leachate Dam 2 was de-silted and had its capacity increased from 2 ML to 10 ML in 2013/2014. The Environmental Weekly Inspection (SWP-2430) includes a check of Leachate Dam 1 and Leachate Dam 2 however it focuses on levels, inflows and outflows and does not specifically include a check of whether de-silting is required.	Compliant OFI 14 CLR IEA 2016 Introduce a mechanism for ensuring maintenance is undertaken as necessary to desilt the Leachate Dams for example including a work order in the PULSE system and/or including a check on the Environmental Inspections.
Environment Protection Licence 726	M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	The required water quality and volumetric flow monitoring records for 2015, 2014 and 2013 were reviewed by the auditors and found to be in order.	Compliant
Environment Protection Licence 726	M1.2	All records required to be kept by this licence must be: (a) in a legible form, or in a form that can readily be reduced to a legible form; (b) kept for at least 4 years after the monitoring or event to which they relate took place; and (c) produced in a legible form to any authorised officer of the EPA who asks to see them.	Records of discharge water quality and volumetric flow monitoring for 2015, 2014 and 2013 were reviewed by the auditors and found to be in order. The previous IEA noted that multiple secondary records of individual data were maintained in electronic format and that there existed a potential for data entry errors to occur as data was transcribed from one spreadsheet to another. It recommended that water discharge monitoring data be consistently recorded in a single controlled location to minimise potential data transcription errors. From 2013 the ALS monitoring Excel workbook included a spreadsheet titled 'ldp002 database' which centrally recorded the monitoring results for LDP002 and was updated each month to include the most recent round of monitoring so that the December report had the results for the entire year, negating the need for transcribing 12 months of data in order to conduct the annual analysis.	Compliant
Environment Protection Licence 726	M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: (a) the date(s) on which the sample was taken; (b) the time(s) at which the sample was collected; (c) the point at which the sample was taken; and (d) the name of the person who collected the sample.	Reviewed primary water quality data records for 2015, 2014 and 2013 were found to contain the prescribed details in relation to sample collection.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:	This condition prescribes monthly monitoring during discharge for EPA Points 1, 2, 3 and 4 by grab sample. The auditors reviewed primary water quality data records for the period 2013-2015. During this period LDP002 discharged daily and monthly sampling was undertaken. There were no discharges at LDP01, LDP03 and LDP04. The 2012 AEMR reported that LDP03 discharged water on only one occasion during 2012 and provided results of the monitoring. LDP04 reportedly did not discharge. The 2011 AEMR reported that LDP03 and LDP04 each discharged water on only one occasion during 2011 and provided results of the monitoring.	Compliant
Environment Protection Licence 726	M3.1	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted. Note: The Protection of the Environment Operations (Clean Air) Regulation 2010 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".	The ALS monitoring results Excel workbook includes a spreadsheet titled 'Methodology of Water Analysis'. This spreadsheet lists the test, method and laboratory undertaking the analysis. It also includes a note which states "in accordance with 'Standard Methods for the Examination of Water and Wastewater'. The auditors reviewed the 'Approved Method for the Sampling and Analysis of Water Pollutants in New South Wales' produced by the EPA and compared the EPA approved methods with those listed in the 'Methodology of Water Analysis' spreadsheet of the December 2014 monitoring results workbook. The following was noted: - The list of tests and methods used does not include all of the pollutants tested. For example, arsenic, boron, cadmium, selenium and zinc. - A number of the methods listed are in-house methods that may comply with the Approved Methods however this is not evident or noted in this document. The previous IEA noted some variations between the Approved Methods and those undertaken by the laboratory. It recommended that Clarence Colliery require its third-party water discharge sample analysis contractor (ALS) to provide clarification in relation to variations between its analytical methods and those prescribed by NSW EPA. It also recommended that ALS confirm and document within its analytical reports that the samples were analysed within n laboratory holding times. These recommendations are still considered relevant.	Not verified REC 34 CLR IEA 2016 The 'Methodology of Water Analysis' spreadsheet within the monthly monitoring results Excel workbook provided by ALS should be revised to ensure the list of test methods includes all the tests conducted as required by the EPL. This table should also include a reference to the Approved Methods prescribed by the NSW EPA and clarify or note any variations between the methods used. ALS should confirm and document within its analytical reports that samples are analysed within laboratory holding times.
Environment Protection Licence 726	M3.2	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.	Air pollutant monitoring required by the EPL is limited to depositional dust. It is noted TSP and PM ₁₀ monitoring is conducted by Clarence as required by its Development Consent however this is not a requirement of the EPL. EPL Condition M2.2 requires that depositional dust monitoring be undertaken in accordance with the Australian Standard 3580.10.1-2003. The ALS monitoring results Excel workbook includes a spreadsheet titled 'Methodology of Dust Analysis'. This spreadsheet lists the test, method and laboratory undertaking the analysis. The table notes the method as 3580.10.1. It also includes a note which states <i>In accordance with "Methods for sampling and analysis of ambient air Method 10.1: Determination of particulate matter- Deposited matter-Gravimetric method"</i>	Compliant
Environment Protection Licence 726	M4.1	The licensee must undertake yearly (in-line with the reporting period) noise monitoring as outlined below, to determine compliance with the noise limits stipulated by condition L5.1: a) 1 day attended noise monitoring covering the day, evening and night time periods; and b) 5 days unattended noise monitoring (monitor and logger) covering each days day, evening and night time periods.	This Condition was included in the EPL by variation issued on the 2 July 2013. Annual noise monitoring was undertaken to assess compliance with the noise impact assessment criteria specified in Development Consent DA 504-00. The results of this monitoring are discussed under S3-15. A review of the reports confirmed that attended monitoring covered the day, evening and night time periods. Unattended monitoring commenced in 2014 and was noted to include greater than 5 days covering each day, evening and night time periods. It is noted the 2013 noise survey was conducted in March prior to the variation requiring unattended noise monitoring and so unattended monitoring was not undertaken in 2013.	Compliant
Environment Protection Licence 726	M4.2	The results of the noise monitoring required by condition M4.1, and an interpretation of these results, must be provided as an attachment to each corresponding years Annual Return.	The results of the noise monitoring were not included as an attachment to each corresponding years Annual Return but were instead included within the AEMR. This is strictly not complying with the condition. It was reported that should an exceedance be recorded then it would be reported to the EPA.	Administrative non-compliance REC 35 CLR IEA 2016 Attach the noise monitoring results to the Annual Return or receive written confirmation from the EPA that it is satisfied with receiving the results as part of the AEMR.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	M4.3	The licensee, following the receipt of a noise related complaint and if required by the EPA, must undertake noise monitoring as required by the EPA to determine compliance with the noise limits stipulated by condition L5.1.	During the audit period, Centennial received complaints regarding a low-frequency continuous and repetitive pulse type noise suggested to be originating from the Clarence Colliery ventilation fan and/or the Springvale Colliery ventilation fan. In response Clarence engaged acoustic consultants SLR to undertake a series of investigations which suggested the ventilation fans were not the source of the disturbance. In addition Centennial engaged The Acoustic Group to undertake further acoustic investigation into the low frequency noise concerns. The Centennial Low Frequency Noise Report (The Acoustic Group, 5.03.15) was inconclusive and unable to determine the low frequency noise source at the Clarence residence. The report was reviewed by Global Acoustics (letter report dated 4.05.15) who supported the conclusion for additional testing. A response was provided to the two residences and the EPA enclosing the report and committing to further investigation by letter dated 8.05.15. Clarence engaged EMM to undertake a further investigation report. This report included monitoring when the Springvale fan was on and off and concluded that it is highly unlikely the Springvale vent fan is a contributor to noise at each residence. Copies of this report (dated 20 January 2016) were provided to residences on 29.01.16.	Compliant
Environment Protection Licence 726	M4.4	The results of the noise monitoring required by condition M4.3, and an interpretation of these results, must be provided to the EPA within 21 days of the completion of the noise monitoring.	As described above the EPA was provided with copies of the reports into the low frequency noise investigation.	Compliant
Environment Protection Licence 726	M5.1	Weather monitoring For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.	The meteorological station was operational during the audit period. It was reportedly maintained by ALS on a quarterly basis with results uploaded into the client data portal. The auditors observed results for 1/03/2012 to Jan 2016. It was reported that prior to 2012, ALS were not operating the meteorological station and therefore data was not available from ALS for this period. This historical data may be available however was difficult to source. A review of the data indicated that the specified parameters were monitored with the exception of sigma theta. Clarence was clarifying this with ALS. An independent review of compliance with the NSW EPA Approved Methods for Sampling of Air Pollutants in New South Wales has not been undertaken as part of this audit.	Not verified REC 36 CLR IEA 2016 Ensure the meteorological station is measuring the sigma theta and that this data is provided to Clarence.
Environment Protection Licence 726	M6.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	Auditors reviewed records of community complaints received by the site during the period 2011 -2015. Seven complaints were received over this period. Five of these were received in 2013 and related to low frequency noise which is discussed further under M4.3 above. One complaint was received in 2012, one in 2015 and none in 2011 and 2014. The auditors sighted examples of the records maintained in ECD for the complaints and are satisfied that this requirement has been met. A complaint was received during the audit site inspection and it was observed by the auditors that the complaint response was given a high priority and promptly investigated by the Environment and Community Coordinator and the Mine Manager.	Compliant
Environment Protection Licence 726	M6.2	The record must include details of the following: (a) the date and time of the complaint; (b) the method by which the complaint was made; (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; (d) the nature of the complaint; (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and (f) if no action was taken by the licensee, the reasons why no action was taken.	Once a complaint is received, the Environment and Community Coordinator enters it into ECD. ECD was demonstrated to the auditors during the site inspection. The auditors sighted examples of the forms completed in ECD for complaints and noted the prescribed details were recorded.	Compliant
Environment Protection Licence 726	M6.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	Refer M4.1 above	Compliant
Environment Protection Licence 726	M6.4	The record must be produced to any authorised officer of the EPA who asks to see them.	Noted. The site has advised that no such request has been made during the audit period.	Not triggered
Environment Protection Licence 726	M7.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	Clarence operates a Community Information Hotline (6353 8039) which is manned by the Environment and Community Coordinator during normal working hours. Out of hours it was reported that the hotline is answered by the control room or the complainant can leave a voice mail message.	Compliant
Environment Protection Licence 726	M7.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	The Clarence Community Information Hotline (6353 8039) was advertised on its website.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	M7.3	The preceding two conditions do not apply until 3 months after: (a) the date of the issue of this licence or (b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.	Noted	Noted
Environment Protection Licence 726	M8.1	Requirement to monitor volume or mass For each discharge point or utilisation area specified below, the licensee must monitor: (a) the volume of liquids discharged to water or applied to the area; (b) the mass of solids applied to the area; (c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified: POINT 1: Daily during any discharge (estimate) POINT 2: Daily using inline bubble metre instrumentation POINT 3: Daily during any discharge (estimate) POINT 4: Daily during any discharge (estimate)	An in-line meter has been installed at LDP002 for measuring flow. The auditors reviewed the Excel spreadsheet 'LDP2 Volume Discharge' which included the daily discharge volumes for the period 1.01.13 to 29.02.16. Data gaps were limited to 16 days during October 2013 due to extensive bushfires that damaged equipment and two months at the beginning of 2015 due to the logger failing and the time taken to service it by the contractor. For this two month period, the flow was estimated using data from the WTP. Discharges from LDP01, LDP03 and LDP04 were reportedly estimated. A review of the primary water quality data records for the period 2013-2015 indicated that had been no discharges at LDP01, LDP03 and LDP04. The 2012 Annual Return reported that LDP03 discharged 900 kL of water on one occasion during 2012. No discharges were reported from LDP01 and LDP04 The 2011 Annual Return reported that LDP03 and LDP04 each discharged water on one occasion during 2011 (900 kL and 400 kL respectively).	Compliant
Environment Protection Licence 726	R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: (a) a Statement of Compliance; and (b) a Monitoring and Complaints Summary. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Annual Returns were sighted for 2011 – 2015.	Compliant
Environment Protection Licence 726	R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below.	The reviewed Annual Returns correspond to the respective reporting periods	Compliant
Environment Protection Licence 726	R1.3	Where this licence is transferred from the licensee to a new licensee: (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.	Not applicable. No licence transfer has occurred.	Not triggered
Environment Protection Licence 726	R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or (b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.	Not applicable. No licence surrender or revocation has occurred.	Not triggered
Environment Protection Licence 726	R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	The timing of the submission of the Annual Returns was not able to be verified as, whilst prepared by Clarence personnel, it is submitted by Centennial Corporate and the evidence of submission was not held locally.	Not verified REC 37 CLR IEA 2016 Obtain evidence of submission of the Annual return within the specified timeframe from Centennial Corporate and maintain / file on site.
Environment Protection Licence 726	R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	Copies of Annual Returns for the period 2011 -2015 were held at the site, as sighted by the auditors.	Compliant
Environment Protection Licence 726	R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: (a) the licence holder; or (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.	Copies of Annual Returns for the period 2011 -2015 were held at the site, as sighted by the auditors.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	R1.8	A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.	Noted	Noted
Environment Protection Licence 726	R2.1	Notifications must be made by telephoning the Environment Line service on 131 555. Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	The following three incidents causing or threatening material harm to the environment were recorded during the audit period based on a review of a print out of the incidents log from ECD as well as the AEMRs: 1. 2 July 2015: Release of coal rejects and fines into the Wollangambe River. This incident was reported directly to the site's EPA Officer and was notified to the Environment Line on the 2.07.15. The site's Pollution Incident Response Management Plan (PIRMP) was then activated and the relevant agencies called. A copy of the Environment Coordinator's diary for the 2 July was sighted noting the phone calls with the relevant agencies and the time they were made. This incident is discussed in detail in the main section of this report. 2. 12 April 2012: Spill of sludge at the WTP following maintenance to the sludge transfer system. The sludge entered the polishing lagoon and some material seeped under a pipe and entered downstream of LDP002. The incident log and the written report provided to the DPE noted that the EPA and other relevant authorities were notified. 3. 23 February 2011: Coal fines were identified within a manmade drainage channel connected to the south eastern most portion of the washed coal stockpile area downstream of Leachate Dam 2. The drainage line entered the hanging swamp. The EPA was notified of this incident on the 11.03.11 and Clarence was issued with an Official Caution on the 16.03.11.	Compliant
Environment Protection Licence 726	R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	For the July 2015 incident, a written report was provided to the EPA dated 9.07.15. In addition a Clean Up Notice was issued by the EPA on the day following the incident requiring Clarence provide weekly reports of the status of the clean up. The Environment and Community Coordinator has been providing weekly reports to the EPA since the date of the incident (02.07.15). The auditors sighted examples of these weekly reports. This incident is discussed further in the main section of the report. For the incident on the 12.04.12, a written report was provided to the DPE dated 18.04.12. It assumed that this same report was also provided to the EPA however the report to the EPA was not sighted. The written report following the incident on the 23.02.11 was not available. Based on evidence not being available to demonstrate written reports were provided to the EPA for the historical incidents in 2011 and 2012, this condition has been assessed as not verified.	Not verified
Environment Protection Licence 726	R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: (a) where this licence applies to premises, an event has occurred at the premises; or (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	Not applicable. The site has advised that no such request has been made during 2011-2015.	Not triggered
Environment Protection Licence 726	R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	Not applicable. Refer R3.1 above.	Not triggered
Environment Protection Licence 726	R3.3	The request may require a report which includes any or all of the following information: (a) the cause, time and duration of the event; (b) the type, volume and concentration of every pollutant discharged as a result of the event; (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and (g) any other relevant matters.	Not applicable. Refer R3.1 above.	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Environment Protection Licence 726	R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.	Not applicable. Refer R3.1 above.	Not triggered
Environment Protection Licence 726	G1.1	A copy of this licence must be kept at the premises to which the licence applies.	A copy of the licence is held at the site, as observed by the auditors. The EPA completed an administrative audit on the 4.01.16 which focused on the administrative requirements of the EPL. The EPA audit found Clarence to be compliant with the administrative requirements of its EPL including this requirement.	Compliant
Environment Protection Licence 726	G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.	Noted.	Noted
Environment Protection Licence 726	G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.	The licence is available to employees who may wish to inspect it.	Compliant
Environment Protection Licence 726	G2.1	The location of EPA identification points 1 to 8 must be clearly marked by a sign that indicates the EPA identification points used in this licence and be located as close as practical to these points.	It was reported that the dust gauges were sign posted (these were not observed during the site inspection) however the Licensed Discharge Points were not clearly marked. Post site inspection it was reported that signs for the Licensed Discharge Points have been ordered.	Non-compliant REC 38 CLR IEA 2016 Install signs clearly marking licensed discharge points with the EPA identification number as close as practical to the points.
Consolidated Coal Lease 705	1	Notice to Landholders Within a period of three months from the date of grant/renewal of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted/renewed and whether the lease includes the surface. An adequate plan and description of the lease area must accompany the notice. If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted/renewed; state whether the lease includes the surface and must contain an adequate plan and description of the lease area.	Assessed in previous IEA.	Closed out
Consolidated Coal Lease 705	2	Mining, Rehabilitation, Environmental Management Process (MREMP) Mining Operations Plan (MOP) 1) Mining operations, including mining purposes, must be conducted in accordance with a Mining operations plan (the plan) satisfactory to the Secretary. The plan together with environmental conditions of development consent and other approvals will form the basis for a) ongoing mining operations and environmental management and b) ongoing monitoring of the project. 2) The Plan must be prepared in accordance with the Director- General's guidelines current at the time of lodgement. 3) A Plan must be lodged with the Secretary a) prior to the commencement of mining operations (including mining purposes); b) subsequently as appropriate prior to the expiry of any current Plan; and c) in accordance with any direction issued by the Director- General 4) The Plan must present a schedule of proposed mine development for a period of up to seven (7) years and contain diagrams and documentation which identify a) area(s) proposed to be disturbed under the plan b) mining and rehabilitation method(s) to be used and their sequence c) areas to be used for disposal of tailings/waste d) existing and proposed surface infrastructure e) existing flora and fauna on the site f) progressive rehabilitation schedules g) areas of particular environmental, ecological and cultural sensitivity and measures to protect these areas h) water management systems (including erosion and sediment controls); i) proposed resource recovery and	The current MOP "Clarence Colliery Mining Operations Plan 2014-2017" dated 30.09.14 was approved by DRE on 25.11.14. A detailed review of the MOP and whether it was implemented was not undertaken as part of this audit. It was reported that the MOP will be updated for operation of REA V. At the time of the audit the DRE was investigating whether Clarence was in breach of this condition relating to the incident on the 2 July 2015.	Not verified

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		<p>j) where the mine will cease extraction during the term of the Plan, a closure plan including final rehabilitation objectives/ methods and post mining land use / vegetation</p> <p>5) The Plan when lodged will be reviewed by the Department</p> <p>6) The Secretary may within two (2) months of the lodgement of a Plan, require modification and re-lodgement</p> <p>7) Of a requirement in accordance with clause 6 is not issued within two months of the lodgement of a plan, the lease holder may proceed with implementation of the plan</p> <p>8) During the life of the Mining Operations Plan, proposed modifications to the Plan must be lodged with the Director - General and will be subject to the review process outlined in clauses 5 - 7 above.</p>		
Consolidated Coal Lease 705	3	<p>Annual Environmental Management Report (AEMR)</p> <p>1) Within 12 months of the commencement of mining operations and thereafter annually or, at such other times as may be allowed by the Secretary, the lease holder must lodge an Annual Environmental Management Report (AEMR) with the Director- General</p> <p>2) The AEMR must be prepared in accordance with the Secretary's guide lines current at the time of reporting and contain a review and forecast of performance for the proceeding and ensuing twelve months in terms of</p> <p>a) the accepted Mining Operations Plan</p> <p>b) development consent requirements and conditions</p> <p>c) Department of Environment and Conservation and Department of Planning licences and approvals</p> <p>d) any other statutory environmental requirements;</p> <p>e) details of any variations to environmental approvals applicable to the lease area; and</p> <p>f) where relevant, progress towards final rehabilitation objectives.</p> <p>3) After considering an AEMR the Secretary may, by notice in writing, direct the lease holder to undertake operations, remedial actions or supplementary studies in the manner and within the period specified in the notice to ensure that operations on the lease area are conducted in accordance with sound mining and environmental practice.</p> <p>4) The lease holder shall, as and when directed by the Minister, cooperate with the Secretary to conduct and facilitate review of the AEMR involving other government agencies and the local council</p>	<p>Annual Environmental Management Reports (AEMRs) have been prepared. AEMRs were sighted for period 2010 to 2014. The AEMR for 2015 was being prepared at the time of the audit.</p> <p>Examples of letters to the required agencies were sighted indicating the AEMR was sent to the appropriate agencies.</p> <p>Refer to Development Consent DA 504-00 S5-5 for discussion of comments received by the agencies.</p>	<p>Compliant</p> <p>Refer to OFI's under DA 504-00 S5-5</p>
Consolidated Coal Lease 705	4	<p>Subsidence Management</p> <p>a The lease holder shall prepare a Subsidence Management Plan prior to commencing any underground mining operations which will potentially lead to subsidence of the land surface</p> <p>b Underground mining operations which will potentially lead to subsidence include secondary extraction panels such as longwalls or minerals, associated first workings (gate roads, installation roads and associated main headings, etc), and pillar extractions, and are otherwise defined by the Guideline for Applications for Subsidence Management Approvals</p> <p>c The lease holder must not commence or undertake underground mining operations that will potentially lead to subsidence other than in accordance with a Subsidence Management Plan approved by the Secretary, an approval under the Coal Mines Regulation Act 1982, or the document New Subsidence Management Plan Approval Process - Transitional Provisions</p> <p>d Subsidence Management Plans are to be prepared in accordance with the Guideline for Applications for subsidence management Approvals</p> <p>e Subsidence Management Plans as approved shall form part of the Mining Operations Plan required under Condition 2 and will be subject to the Annual Environmental Management Report process as set out under Condition 3, The SMP is also subject to the requirements for subsidence monitoring and reporting set out in the document New Approval Process for Management of Coal Mining Subsidence - Policy</p>	<p>Refer to the main section of the report for detailed discussions on subsidence management and the preparation of SMPs.</p>	<p>Compliant</p>

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Consolidated Coal Lease 705	5	Working Requirements The lease holder must a ensure that at least 129 competent people are efficiently employed on the lease area on each week day except Saturday or any week day that is a public holiday, or b expend on operations carried out in the course of prospecting or mining the lease area, an amount of not less than \$2, 257,500 per annum whilst the lease is in force The Minister may at any time or times, by instrument in writing served on the lease holder, increase or decrease the expenditure required or the number people to be employed	Both requirements have been met. There are 245 people on site, and an amount greater than stated is spent annually.	Compliant
Consolidated Coal Lease 705	6	Control of Operations a If an Environmental Officer (EO) of the Department believes that the lease holder is not complying with any provision of the Act or any condition of this lease relating to the working of the lease, he may direct the lease holder to i) cease working the lease or ii) cease that part of the operation not complying with the Act or conditions until in the opinion of the EO the situation is rectified b The lease holder-must comply with any direction given. The DG may confirm, vary or revoke any such direction c A direction referred to in this condition may be served on the Mine Manager	Clarence was directed by the DRE to cease work on REA III following the July 2015 incident. Clarence was complying with this request and at the time of the audit no work was being done in REA III. This is discussed further in the main section of the report.	Compliant
Consolidated Coal Lease 705	7	Reports The lease holder must provide an exploration report within a period of twenty - eight days after each anniversary of the date this lease has effect or at such other date as the DG may stipulate of each year. The report must be to the satisfaction of the DG and contain the following a- Full particulars, including results, interpretation and conclusions, of all exploration conducted during the twelve months period b- Details of expenditure incurred in conducting that exploration c- A summary of all geological findings acquired through mining or development evaluation activities d- Particulars of exploration proposed to be conducted in the next twelve months period e- All plans, maps, sections and other data necessary to satisfactorily interpret the report	Examples of Annual Exploration Report for Clarence Colliery Mining Titles were sighted for November 2011, December 2014 and December 2015. Examples of evidence that the reports were submitted were sighted (submittal record provided by coal.geology; webmineral.titles dated for 18.12.15 and 13.01.16 (for the resubmitted 2015 report) Examples of evidence that the reports were reviewed and accepted by DRE were sighted (email dated 21.01.16). A brief review of the reports indicated that the required information was provided.	Compliant
Consolidated Coal Lease 705	8	a The lease holder grants to the licence, the right in copyright to all exploration reports lodged in copyright. Minister, by way of a non-exclusive publish, print, adapt and reproduce any form and for the full duration of copyright b The non - exclusion licence will operate as a consent for the purposes of section 365 of the Mining Act 1992	Noted.	Not triggered
Consolidated Coal Lease 705	9	Confidentiality a All exploration reports submitted in accordance with the conditions of this lease will be kept confidential while the lease is in force, except in cases where: i- the lease holder has agreed that specified reports may be made non - confidential ii- reports deal with exploration conducted exclusively on areas that have ceased to be part of the lease b- Confidentiality will be continued beyond the termination of a lease where an application for a flow-on title was lodged during- the currency of the lease. The confidentiality will last until that flow- on title or any subsequent flow-on title, has terminated c- The Secretary may extend the period of confidentiality	Noted.	Not triggered
Consolidated Coal Lease 705	10	The terms of the non-exclusive copyright licence granted under condition 8 (a) are: (a) The Minister may sub-licence others to publish, print, adapt and reproduce but not on-licence reports. (b) the Minister and any sub-licence will acknowledge the lease holder's and any identifiable consultant's ownership of copyright in any reproduction of the reports, including storage of reports onto an electronic database. (c) the lease holder does not warrant ownership of all copyright works in any	Noted.	Not triggered

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		report and, the lease holder will use best endeavour to identify those parts of the report for which the lease holder on, the copyright. (d) there is no royalty payable by the Minister for the licence. If the lease holder has reasonable grounds to believe that the Minister has exercised his rights under the non-exclusive copyright licence in a manner which adversely affects the operations of the lease holder, that licence is revocable on the giving of a period of not less than three months notice,		
Consolidated Coal Lease 705	11	<p>Blasting</p> <p>a Ground Vibration The lease holder must ensure that the ground vibration peak particle velocity generated by any blasting within the lease area does not exceed 10 mm/second and does not exceed 5 mm/second in more than 50/o of the total number of blasts over a period of 12 months at any dwelling or occupied premises as the case may be, unless determined otherwise by the Department of Environment and Conservation</p> <p>b Blast Overpressure The lease holder must ensure that the blast overpressure noise level generated by any blasting within the lease area does not exceed 120 dB (linear) and does not exceed 115 dB (linear) in more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises, as the case may be, unless determined otherwise by the Department of Environment and conservation</p>	No blasting conducted.	Not triggered
Consolidated Coal Lease 705	12	<p>Safety Operations must be carried out in. a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill holes shafts and excavations must be appropriately protected, to the satisfaction of the Secretary, to ensure that access to them by persons and stock is restricted. Abandoned shafts and excavations opened up or used by the lease holder must be filled in or otherwise rendered safe to a standard acceptable to the Secretary.</p>	Safety was not assessed as part of this audit.	Not assessed

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Consolidated Coal Lease 705	13	<p>Rehabilitation</p> <p>a- Land disturbed must be rehabilitated to a stable and permanent form suitable for a subsequent land use acceptable to the Director-General and in accordance with the Mining operations plan so that</p> <ul style="list-style-type: none"> - there is no adverse environmental effect outside the disturbed area and that the land is properly drained and protected from soil erosion. - the state of the land is compatible with the surrounding land and land use requirements. - the landforms, soils, hydrology and flora require no greater maintenance than that in the surrounding land. - in cases where revegetation is required and native vegetation has been removed or damaged, the original species must be re-established with close reference to the flora survey included in the Mining operations plan. if the original vegetation was not native, any re-established vegetation must be appropriate to the area and at an acceptable density, - the land does not pose a threat to public safety <p>b- Any topsoil that is removed must be stored and maintained in a manner acceptable to the Secretary</p>	<p>Clarence engaged environmental consultants AECOM to develop a rehabilitation monitoring program in 2012. The methodology includes Landscape Function Analysis, vegetation dynamics, habitat complexity, disturbance assessment and photographic monitoring. The monitoring program includes seven monitoring sites, comprising four sites in rehabilitated areas (one in each of REA I, REA II, REA III and REA IV) and three analogue sites located within adjacent undisturbed bushland. Monitoring has been undertaken since 2012. The 2015 monitoring report (AECOM 5.02.16) made the following overarching conclusions:</p> <ul style="list-style-type: none"> - overall improvement from 2014 indicating signs of recovery from the impacts of the State Mine Bushfire in October 2013. - REA I and REA II rated as 'satisfactory'. REA III rated as 'poor' and REA IV rated as 'very poor'. - active erosion was observed at most rehabilitated sites. REA III and REA IV were the most affected with moderately severe gullies occurring in places, and tunnelling erosion occurring at REA IV. The lack of ground cover and low densities of woody vegetation at these sites was a concern for achieving a stable landform. <p>Recommendations included:</p> <ul style="list-style-type: none"> - undertaking maintenance direct seeding to increase ground cover. - undertaking maintenance tube stock planting of endemic canopy species in areas where trees and shrubs are failing to establish - undertaking regular walkthrough of rehabilitated areas to visually monitor erosion and consider implementing remediation works as required if overall landform stability gets compromised. - adding / spreading organic material on the ground to enhance ground cover and organic matter due to the lack of topsoil. - continuing the implementation of the pro-active weed control program including undertaking a regular (at least monthly) walk through of the rehabilitated areas to detect potential onset of weeds. <p>At the time of the audit site inspection, as outlined in the rehabilitation monitoring reports, disturbed land was yet to be rehabilitated to a stable and permanent form.</p> <p>Given this, the auditors were not able to verify compliance with the condition. However with further remedial actions implemented as described above, rehabilitation performance may improve. The compliance status for this condition is considered Not verified.</p> <p>Rehabilitation monitoring and maintenance was ongoing.</p>	<p>Not verified</p> <p>REC 39 CLR IEA 2016</p> <p>Implement recommendations made in the 2015 Rehabilitation Monitoring Report (AECOM 2016). These included:</p> <ul style="list-style-type: none"> - undertaking maintenance direct seeding to increase ground cover. - undertaking maintenance tube stock planting of endemic canopy species in areas where trees and shrubs are failing to establish - undertaking regular walkthrough of rehabilitated areas to visually monitor erosion and consider implementing remediation works as required if overall landform stability gets compromised. - adding / spreading organic material on the ground to enhance ground cover and organic matter due to the lack of topsoil. - continuing the implementation of the pro-active weed control program including undertaking a regular (at least monthly) walk through of the rehabilitated areas to detect potential onset of weeds. <p>REC 40 CLR IEA 2016</p> <p>Ensure continual review of rehabilitation performance by competent persons and regular implementation of strategies to improve rehabilitation.</p>
Consolidated Coal Lease 705	14	The lease holder must comply with any direction given by the Director- General regarding the stabilisation and revegetation at any mine residues tailings or overburden dumps situated on the lease area.	<p>At the time of the audit a Direction under S240 of the Mining Act had been issued by the DRE (taking effect from the 21.07.15) to cease using REAs as holding cells for thickened coal fines, tailings and liquids Clarence was complying with this order and no works were being undertaken on REA III at the time of the audit site inspection.</p> <p>It was reported that once the cease works Direction is lifted, Clarence will submit a HRA application for the decommissioning and rehabilitation of REA III.</p> <p>As indicated elsewhere, the prompt rehabilitation of REA III is fully supported and required to meet various approval conditions.</p>	Compliant.

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Consolidated Coal Lease 705	15	<p>Exploratory Drilling</p> <p>1 At least twenty eight days prior to commencement of drilling operations the lease holder must notify the relevant Department of Infrastructure, Planning and Natural Resources regional hydrogeologist of the intention to drill exploratory drill holes together with information on the location of the proposed holes</p> <p>2. If the lease holder drills exploratory drill holes he must satisfy the Secretary that</p> <p>(a) all cored holes are accurately surveyed and permanently marked in accordance with Departmental guidelines so that their location can be easily established</p> <p>(b) all holes cored or otherwise are sealed to prevent the collapse of the surrounding surface;</p> <p>(c) all drill holes are permanently sealed with cement plugs to prevent surface discharge of groundwater's;</p> <p>(d) if any drill hole meets natural or noxious gases it is plugged or sealed to prevent their escape;</p> <p>(e) if any drill hole meets an artesian or sub-artesian flow it is effectively sealed to prevent contamination of aquifers.</p> <p>(f) once any drill hole ceases to be used the hole must be sealed in accordance with Departmental guidelines. Alternatively, the hole must be sealed as instructed by the Secretary.</p> <p>(g) once any drill hole ceases to be used the land and its immediate vicinity is left in a clean, tidy and stable condition.</p>	<p>1) Sighted letter to DRE dated 15.08.14 of the intention to drill three boreholes and providing borehole locations. One of these boreholes (CLRP22) is located within the CCL 705.</p> <p>2a) all holes are surveyed using GPS.</p> <p>2b) All holes reported to be capped. CLRP 17 (within ML1583) was observed to be capped during site inspection. Not all holes observed.</p> <p>2c) holes were reportedly fully grouted with cement.</p> <p>2d) gas is not generally encountered.</p> <p>2e) no artesian flow was reported to have been observed.</p> <p>2f) holes were grouted as indicated above.</p> <p>2g) Observed CLRP 17 during site inspection and noted to have been left in a clean, tidy and stable condition.</p>	Compliant
Consolidated Coal Lease 705	16	<p>Prevention of Soil Erosion and Pollution</p> <p>Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a 'relevant approval, and in accordance with an accepted Mining Operations plan. The purpose of this condition, water shall be taken to include any watercourse, water body or groundwaters. The lease holder must observe and perform any instructions given by the Secretary in this regard</p>	<p>This condition has been assessed as non-compliant based on the pollution incident in July 2015 which is discussed further in the main report.</p> <p>Observations of the pit top area also indicated operations were not being carried out in a manner to minimise the potential for pollution. Refer to EPL Condition O1.1.</p>	<p>Non-compliant</p> <p>Refer EPL O1.1</p>
Consolidated Coal Lease 705	17	<p>Transmission lines, communication lines and pipelines</p> <p>Operations must not interfere with or impair that stability or efficiency of any transmission line, communication line, pipeline or any other utility on the lease area without the prior written approval of the Secretary and subject to any conditions he may stipulate</p>	No issues reported or observed.	Compliant
Consolidated Coal Lease 705	18	<p>Fences, Gates</p> <p>a - Activities on the lease may not interfere with or damage fences without the prior written approval of the owner thereof or the Minister and subject to any conditions the Minister may stipulate</p> <p>b- Gates within the lease area must be closed or left open in accordance with the requirements of the landholder</p>	No issues reported or observed.	Compliant
Consolidated Coal Lease 705	19	<p>Roads and Tracks</p> <p>a- Operations must not affect any road unless in accordance with an accepted Mining Operations plan or with the prior written approval of the Secretary and subject to any conditions he may stipulate</p> <p>b- The lease holder must pay to the designated authority in control of the road (generally the local council or the Roads and Traffic Authority) the cost incurred in fixing any damage to roads caused by operations carried out under the lease, less any amount paid or payable from the Mine Subsidence Compensation Fund</p>	<p>a) It was reported that to date operations had not effected any roads. Clarence acknowledged that when it begins to use REA V the MOP will require amendment to include a description of traffic controls.</p> <p>b) Roads on the Newnes Plateau are used every week to two weeks by the site for general monitoring, and more for exploration drilling. Site pays a nominal (less than \$3,000 per year) sum to State Forests. Agreements with State Forests were not sighted.</p> <p>The previous IEA noted that some roads used by Clarence were not well maintained and were impacted by erosion and recommended that Clarence enter into dialogue with State Forests regarding how the condition of roads may be improved. It was reported that Clarence's annual payments cover the cost incurred in fixing damage to roads caused by operations.</p>	Compliant
Consolidated Coal Lease 705	20	<p>Access tracks must be kept to a minimum and be positioned so that they do not cause any unnecessary damage to the land. Temporary access tracks must be ripped, topsoiled and revegetated as soon as possible after they are no longer required for mining operations. The design and construction of access tracks must be in accordance with specifications fixed by the Department of Infrastructure Planning and Natural Resources</p>	<p>Clarence reported that three access tracks had been installed during the audit period. One was to the 800 SMP area drilling program and one was to the 900 SMP area drilling program. Approval was sought from State Forests and the DRE to keep these tracks for monitoring purposes. During the audit period Clarence commenced using Feno survey markers which don't require monitoring lines.</p> <p>The third track was installed to facilitate clean-up of the pollution incident at REA III in July 2015. This track was reportedly included in an REF that was prepared for the clean- up works. At the time of the audit site inspection the track had been largely rehabilitated.</p> <p>It was reported that no specifications were received from the DPE.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Consolidated Coal Lease 705	21	<p>Trees and Timber</p> <p>a- The lease holder must not fell trees, strip bark or cut timber on the lease without the consent of the landholder who is entitled to the use of the timber, or if such a landholder refuses consent or attaches unreasonable conditions to the consent, without the approval of a warden</p> <p>b- The lease holder must not cut destroy ringbark or remove any timber or other vegetative cover on the lease area except such as directly obstructs or prevents the carrying on of operations. Any clearing not authorised under the Mining Act 1992 must comply with the provisions of the Native Vegetation Conservation Act 1997.</p> <p>c- The lease holder must obtain all necessary approvals or licences before using timber from any crown land within the lease area.</p>	<p>a) Consent is sought from the Landholder (State Forests) in regard to any clearing of trees required as part of drilling operations. During the audit period Clarence reported that it had cleared some trees under the approval of the Occupation Permit.</p> <p>b) Clearing activities were observed to be limited in nature, and related to the carrying out of operations.</p> <p>c) Timber located on the lease is not used by Clarence for commercial purposes.</p> <p>Timber was observed to be scattered back onto sites as part of rehabilitation at REA IV and drilling sites.</p>	Compliant
Consolidated Coal Lease 705	23	<p>Resource Recovery</p> <p>a- Notwithstanding any description of mining methods and their sequence or of proposed resource recovery contained within the Mining operations Plan, if at any time the Secretary is of the opinion that minerals which the lease entitles the lease holder to mine and which are economically recoverable at the time are not being recovered from the lease area, or that any such minerals which are being recovered are not being recovered to the extent which should be economically possible or which for environmental reasons are necessary to be recovered, he may give notice in writing to the lease holder requiring the holder to recover such minerals</p> <p>b- The notice shall specify the minerals to be recovered and the extent to which they are to be recovered, or the objectives in regard to resource recovery, but shall not specify the processes the lease holder shall use to achieve the specified recovery</p> <p>c- The lease holder must, when requested by the Secretary, provide such information as the Secretary may specify about the recovery of the mineral resources of the lease area</p> <p>d- The Secretary shall issue no such notice unless the matter has firstly been thoroughly discussed with and a report to the Secretary has incorporated the views of the lease holder</p> <p>e- The lease holder may object to the requirements of any notice issued under this condition and on receipt of such an objection the Minister shall refer it to a warden for inquiry and report under section 334 of the Mining Act, 1992</p> <p>f- After considering the warden's report the Minister shall decide whether to withdraw, modify or maintain the requirements specified in the original notice and shall give the lease holder written notice of the decision. The lease holder must comply with the requirements of this notice,</p>	No notices as indicated have been received by Clarence. SMP Approvals suggest general approval of approach.	Not triggered
Consolidated Coal Lease 705	24	<p>Indemnity</p> <p>The lease holder must indemnify and keep indemnified the Crown from and against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses which may be brought against the lease holder or which the lease holder may incur in respect of any accident or injury to any person or property which may arise out of the construction, maintenance or working of any workings now existing or to be made by the lease holder within the lease area or in connection with any of the operations notwithstanding that all other conditions of this lease shall in all respects have been observed by the lease holder or that any such accident or injury shall arise from any act or thing which the lease holder may be licensed or compelled to do.</p>	Noted.	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Consolidated Coal Lease 705	26	Single Security (extended) a- The single security of \$1,500,000.00 given and maintained with the Minister by the lease holder for the purpose of ensuring the fulfilment by the lease holder of obligations under Consolidate Coal Lease No. 705 (Act 1973) and Mining Leases No's. 1353 and 1354 (Act 1992) is extended to apply to this renewal of this lease b- If the lease holder fails to fulfil any one or more of the obligations under this lease, then the security held may be applied at the discretion of the Minister towards the cost of fulfilling such obligations. For the purpose of this 'clause the lease holder shall be deemed to have failed to fulfil the obligations of the lease if the lease holder fails to comply with any condition or provision hereof, any provision of the Act or regulations made there under or any condition or direction imposed or given pursuant to a condition or provision hereof or of any provision of the Act or regulations made there under	A spreadsheet of securities held by Clarence was sighted and indicated that the required security was held, with Security Certificate 23081002 held for CCL 705, ML1353 and ML1354. The amount of security reportedly held under this Certificate is \$9,267,851.52 calculated in November 2015 and submitted to DRE on 4.03.16. A copy of the Bank Guarantee was not made available or sighted, hence compliance with the condition could not be verified.	Not Verified REC 41 CLR IEA 2016 Make available a copy of the Bank guarantee to ensure compliance with the condition.
Consolidated Coal Lease 705	28	Details Of Lands, Purposes and Additional Conditions The lease holder shall be limited to the following operations and conditions within the specified areas described on the plan annexed hereto and marked 'B'. (See table within original document)	Noted	Not triggered
Consolidated Coal Lease 705	29	With regard to condition No. 28 and the plan annexed hereto and marked "B", the lease holder: a- unless with the consent of the Minister, and subject to such conditions as he may impose the lease holder shall not .dump on the subject lands any residues derived from the beneficiation of coal b- The lease holder shall provide and maintain to the satisfaction of the Minister efficient means to prevent contaminated waters discharging or escaping from the subject area onto surrounding areas and shall comply with any direction given or which may be given in this regard by the Minister c- The lease holder shall carry out and maintain the works authorized in such a manner as not to cause any danger to person or stock d i) the lease holder shall as far as may be practicable, carry out the works hereby authorised in such a manner as to interfere as little as possible with any track traversing the subject lands ii) The lease holder shall comply with any direction which may be given by the Minister or the Secretary regarding use by the public of any such track and if required to do so by the Minister the lease holder shall provide alternate tracks to the satisfaction of the Minister e- The lease holder shall carry out the works hereby authorised in such a manner as not to interfere with the operations of the holder of Permissive Occupancy No 64 /2 Lithgow and any dispute between the lease holder and the holder of the said permissive occupancy shall be decided by the Minister whose decision shall be final f- The lease holder shall upon abandonment of any drill hole on the subject lands, fill in or suitably plug such a drill hole to the satisfaction of the Minister g- The lease holder shall construct and maintain the railway within the subject area in accordance with the specifications and requirements of Rail Corporation of New South Wales h- The lease holder shall ensure that access over the subject land is available at all times to employees of Rail Corporations of New South Wales whilst in performance of their duties i) The lease holder shall within twenty four (24) hours notify the National Parks and Wildlife Services with laboratory analysis results of waters samples taken at discharge points k) The lease holder shall not dump or deposit any coal bearing material extracted during the construction of any shaft on the subject area. Such material shall be removed to the pit head dump facilities of the Clarence Colliery l) Notwithstanding the preceding conditions the lease holder shall not commence any excavation of works directly related to the construction of any shaft within the subject area until such time as the proposed siltation / setting dams have been constructed m) The lease holder shall ensure that any dam constructed on the subject area is not brought into operation until such time as the District inspector of Coal	a) Existing REA's have Section 100 approvals. At the time of the audit Clarence was in the process of obtaining HRA approval (replaced Section 100 approval) of REA V. b) The July 2015 incident resulted in coal fines discharging from REA III into the surrounding area and waters. Refer to main report for further discussion of this incident. c) No incidents of people or stock damage reported. Safety has not been assessed as part of this audit. d) no correspondence was noted by landowners or council regarding interference with tracks. e) not assessed; f) It was reported that exploration bores are grouted to the surface. Bores that are used for exploration and then monitoring purposes have a monument at the surface housing the piezometer. One open borehole was observed during the site visit in the vicinity of Leachate Dam 1. The Environment and Community Coordinator was not aware of it's purpose as it was constructed prior to him being on site. g) not assessed; h) not assessed; i) This condition relates to area marked Green on Plan B which relates to the downcast shaft. It was reported that there have been no discharges from this area and therefore the requirement to provide results to the NPWS was not triggered. k) it was reported that no coal has been dumped at the downcast shaft area; l) not assessed; m) not assessed; n) not assessed. o) not assessed	b) Non-compliant a) – o) Compliant or not assessed REC 42 CLR IEA 2016 Seal off open borehole near leachate dam 1.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
		<p>Mines has certified that</p> <ul style="list-style-type: none"> i) the walls of any such dam has been compacted ii) the capacity of any such dam conforms to design specifications iii) any such dam is structurally sound and iv) the wall and catch drain of any such dam are so located as to trap all down slope movement of material from the construction site n) All topsoil is to be stockpiled prior to the construction of the proposed dams. Such topsoil is to be replaced on the walls of the completed dams o) The dam batters are to be constructed in such a manner as to ensure the stability of the completed earth structure 		
Consolidated Coal Lease 705	30	<p>a- The lease holder shall carry out operations in such a way as to conform strictly to all provisions of the Sydney Water Catchment Management Act 1998 and the regulation there under applying to the prevention of pollution of the Warragamba Outer Catchment Area or the preservation of the purity of the water supply provided thereby or derived there from or for the protection of the property of Sydney Catchment Authority [hereinafter referred to as the Authority] on the Outer Catchment Area and also to all requirements of the Authority from time to time under the said Act or any of the regulations for the time being in force,</p> <p>b-If the lease holder shall at any_ time be using or about to use any process which in the opinion of the Authority is likely to pollute the outer catchment Area or the water supply or to endanger any property of the Authority on the outer catchment Area the lease holder upon service of a notice in writing under the hand or the Minister to do so shall:</p> <ul style="list-style-type: none"> i) discontinue the use of such process immediately or ii) there after refrain from adopting such process at any time as the case may require <p>c- the lease holder shall provide and maintain to the satisfaction of the Minister efficient means to prevent the contamination, pollution, erosion or siltation of any stream or watercourse or outer catchment Area and shall observe any instruction given or which may be given by the Minister with a view to preventing or minimising the contamination, pollution or siltation of any stream watercourse or Outer Catchment Area.</p> <p>D- The lease holder hereby covenants with us ours Heirs and successors and as a separate covenant the lease holder hereby covenants with the Authority and its Successors that the lease holder shall at all times hereafter save harmless and keep us and the said Authority and our Heirs and successors and the successors of the said Authority indemnified from payment of compensation and from and against all actions proceedings claims and demands in respect any injury loss of damage arising out of or in any way connected with any interference with or deprivation or loss of access to the land and premises of this authority which may occur by reason of any works or operations undertaken or carried out by the said Authority or arising out of or in any way connected with any discontinuance or alteration of any process consequent upon the service of a notice in pursuance of the provisions of condition 31(b) or arising out of or in any way connected with the operation of any regulations relating to outer catchment Areas in force at the date hereof or made by-the said Authority at any time hereafter and the lease holder hereby agrees that for the purpose of this condition the said Authority shall be deemed to be a party to this authority.</p>	Not considered relevant as Clarence did not undertake any exploratory drilling or other activities in the SCA catchment area during the audit period.	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Consolidated Coal Lease 705	31	<p>The lease holder shall</p> <p>a- Make such provisions for sanitation as may be directed by the Authority and shall at all times observe and perform' any requirements of the said Authority respecting sanitation.</p> <p>b- not establish any camps or habitations within any area under the control of the Authority unless with the consent of the Authority.</p> <p>c- Not sink any drill hole within the stored waters on the subject area nor within 40 metres of the top water level thereof unless with the consent of the Authority.</p> <p>d- Not sink any drill hole within any watercourse on the Warragamba Outer Catchment area nor within 100 metres thereof unless with the consent of the Authority.</p> <p>e- Not interfere with or impede the use of the Authority tracks of endanger their stability in any way by reason of the operations.</p> <p>f- Not construct any road to the sites of any drill holes unless with the consent of the Authority to the proposed route and type of road construction.</p> <p>g- Not interfere in any way with any fences on or adjacent to the Warragamba Outer Catchment Area unless with the consent in writing of the owner thereof or the Authority</p> <p>h) Give twenty eight days notice to the General Manager, catchment operations and Major Projects, Sydney catchment Authority, Penrith, of its intention to commence drilling operations.</p> <p>i) Not cut or remove any timber except such as directly obstructs or prevents the carrying on of operations and the lease holder shall obtain the consent in writing of the Authority before making use of the timber so cut for other than in connection with operations</p> <p>j) complete work in relation to rehabilitation within the Warragamba Outer Catchment Area before termination of the authority to the satisfaction of the Authority</p>	Not considered relevant as Clarence did not undertake any exploratory drilling or other activities in the SCA catchment area during the audit period.	Not triggered
Mining Lease 1583	1	<p>Notice to Landholders</p> <p>Within a period of three months from the date of grant of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted and whether the lease includes the surface, An adequate plan and description of the lease area must accompany the notice.</p> <p>If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted state whether the lease includes the surface and must contain an adequate plan and description of the lease area.</p>	Assessed in previous IEA.	Closed out
Mining Lease 1583	2	<p>Mining, Rehabilitation, Environmental Management Process (MREMP) Mining Operations Plan (MOP)</p> <p>1) Mining operations, including mining purposes, must be conducted in accordance with a Mining operations plan (the plan) satisfactory to the Secretary. The plan together with environmental conditions of development consent and other approvals will form the basis for</p> <p>a) ongoing mining operations and environmental management and</p> <p>b) ongoing monitoring of the project.</p> <p>2) The Plan must be prepared in accordance with the Director- General's guidelines current at the time of lodgement.</p> <p>3) A Plan must be lodged with the Secretary</p> <p>a) prior to the commencement of mining operations (including mining purposes);</p> <p>b) subsequently as appropriate prior to the expiry of any current Plan; and</p> <p>c) in accordance with any direction issued by the Director- General</p> <p>4) The Plan must present a schedule of proposed mine development for a period of up to seven (7) years and contain diagrams and documentation which identify</p> <p>a) area(s) proposed to be disturbed under the plan</p> <p>b) mining and rehabilitation method(s) to be used and their sequence</p> <p>c) areas to be used for disposal of tailings/waste</p> <p>d) existing and proposed surface infrastructure</p> <p>e) existing flora and fauna on the site</p> <p>f) progressive rehabilitation schedules</p>	<p>The current MOP "Clarence Colliery Mining Operations Plan 2014-2017 dated 30.09.14 was approved by DRE on 25.11.14.</p> <p>A detailed review of the MOP and whether it was implemented was not undertaken as part of this audit.</p> <p>It was reported that the MOP will be updated for operation of REA V.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
		<p>g) areas of particular environmental, ecological and cultural sensitivity and measures to protect these areas</p> <p>h) water management systems (including erosion and sediment controls);</p> <p>i) proposed resource recovery and</p> <p>j) where the mine will cease extraction during the term of the Plan, a closure plan including final rehabilitation objectives/ methods and post mining land use / vegetation</p> <p>5) The Plan when lodged will be reviewed by the Department</p> <p>6) The Secretary may within two (2) months of the lodgement of a Plan, require modification and re-lodgement</p> <p>7) Of a requirement in accordance with clause 6 is not issued within two months of the lodgement of a plan, the lease holder may proceed with implementation of the plan</p> <p>8) During the life of the Mining Operations Plan, proposed modifications to the Plan must be lodged with the Director - General and will be subject to the review process outlined in clauses 5 - 7 above.</p>		
Mining Lease 1583)	3	<p>Annual Environmental Management Report (AEMR)</p> <p>1) Within 12 months of the commencement of mining operations and thereafter annually or, at such other times as may be allowed by the Secretary, the lease holder must lodge an Annual Environmental Management Report (AEMR) with the Director- General</p> <p>2) The AEMR must be prepared in accordance with the Secretary's guide lines current at the time of reporting and contain a review and forecast of performance for the proceeding and ensuing twelve months in terms of</p> <p>a) the accepted Mining Operations Plan</p> <p>b) development consent requirements and conditions</p> <p>c) Department of Environment and Conservation and Department of Planning licences and approvals</p> <p>d) any other statutory environmental requirements;</p> <p>e) details of any variations to environmental approvals applicable to the lease area; and</p> <p>f) where relevant, progress towards final rehabilitation objectives.</p> <p>3) After considering an AEMR the Secretary may, by notice in writing, direct the lease holder to undertake operations, remedial actions or supplementary studies in the manner and within the period specified in the notice to ensure that operations on the lease area are conducted in accordance with sound mining and environmental practice.</p> <p>4) The lease holder shall, as and when directed by the Minister, cooperate with the Secretary to conduct and facilitate review of the AEMR involving other government agencies and the local council</p>	<p>Annual Environmental Management Reports have been prepared. AEMRs were sighted for period 2010 to 2014. The AEMR for 2015 was being prepared at the time of the audit. Examples of letters to the required agencies were sighted indicating the AEMR was sent to the appropriate agencies.</p> <p>Refer to Development Consent DA 504-00 S5-5 for discussion of comments received by the agencies.</p>	<p>Compliant</p> <p>Refer to OFI's under DA 504-00 S5-5</p>
Mining Lease 1583	4	<p>Subsidence Management</p> <p>a) The lease holder shall prepare a Subsidence Management Plan prior to commencing any underground mining operations which will potentially lead to subsidence of the land surface</p> <p>b) Underground mining operations which will potentially lead to subsidence include secondary extraction panels such as longwalls or miniwalls, associated first workings (gateroads, installation roads and associated main headings, etc), and pillar extractions, and are otherwise defined by the Guideline for Applications for Subsidence Management Approvals</p> <p>c) The lease holder must not commence or undertake underground mining operations that will potentially lead to subsidence other than in accordance with a Subsidence Management Plan approved by the Secretary, an approval under the coal Mines Regulation Act 1982, or the document New Subsidence Management plan Approval Process - Transitional Provisions</p> <p>d) Subsidence Management Plans are to be prepared in accordance with the Guideline for Applications for subsidence Management Approvals</p> <p>e) Subsidence Management Plans as approved shall form part of the Mining Operations Plan required under Condition 2 and will be subject to the Annual Environmental Management Report process as set out under Condition 3. The SMP is also subject to the requirements for subsidence monitoring and reporting set out in the document New Approval Process for Management of Coal Mining Subsidence - Policy.</p>	<p>Refer to the main section of the report for detailed discussions on subsidence management and the preparation of SMPs.</p>	<p>Compliant</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Mining Lease 1583	5	Working Requirement The lease holder must a) ensure that at least 134 competent people are efficiently employed on the lease area on each week day except Saturday or any week day that is a public holiday or b) expend on operations carried out in the course of prospecting or mining the lease area, an amount of not less than \$2,345,000.00 per annum whilst the lease is in force The Minister may at any time or times, by instruments in writing served on the lease holder, increase or decrease the expenditure required or the number of people to be employed	Both requirements have been met. There are 245 people on site, and an amount greater than stated is spent annually.	Compliant
Mining Lease 1583	6	Control of Operations a) If an Environmental Officer of the Department believes that the lease holder is not complying with any provision of the Act or any condition of this lease relating to the working of the lease, he may direct the lease holder to: i) cease working the lease or ii) cease that part of the operation not complying with the Act or conditions until in the opinion of the Environmental Officer the situation is rectified b) The lease holder must comply with any direction given, The Director-General may confirm vary or revoke any such direction c) A direction refined to in this condition may be served on the Mine Manager	Clarence was issued with a Direction under S240 of the Mining Act on the 21.07.15 to cease using REAs as holding cells for thickened coal fines, tailings and liquids following the July 2015 incident. Clarence was complying with this request and at the time of the audit no work was being done in REA III. This is discussed further in the main section of the report.	Compliant
Mining Lease 1583	7	Reports The lease holder must provide an exploration report, within a period of twenty-eight days after each anniversary of the date this lease has effect or at such other date as the Secretary may stipulate, of each year. The report must be to the satisfaction of the Secretary and contain the following a) Full particulars, including results, interpretation and conclusions, of all exploration conducted during the twelve months period b) Details of expenditure incurred in conducting that exploration c) A summary of all geological findings acquired through mining or development evaluation activities d) Particulars of exploration proposed to be conducted in the next twelve months period e) All plans, maps, sections and other data necessary to satisfactorily interpret the report	Examples of Annual Exploration Report for Clarence Colliery Mining Titles were sighted for November 2011, December 2014 and December 2015. Examples of evidence that the reports were submitted were sighted (submittal record provided by coal.geology; webmineral.titles dated for 18.12.15 and 13.01.16 (for the resubmitted 2015 report). Examples of evidence that the reports were reviewed and accepted by DRE were sighted (email dated 21.01.16). A brief review of the reports indicated that the required information was provided.	Compliant
Mining Lease 1583	8	Licence to use Reports a) The lease holder grants to the Minister, by way of a non-exclusive licence, the right in copyright to publish, print, adapt and reproduce all exploration reports lodged in any form and for the full duration of copyright b) The non-exclusive licence will operate as a consent for the purposes of section 365 of the Mining Act 1992	Noted.	Not triggered
Mining Lease 1583	9	Confidentiality a) All exploration reports submitted in accordance with the conditions of this lease will be kept confidential while the lease is in force, except in cases where i) the lease holder has agreed that specified reports may be made non-confidential ii) reports deal with exploration conducted exclusively on areas that have ceased to be part of the lease b) Confidentiality will be continued beyond the termination of a lease where an application for a flow-on title was lodged during the currency of the lease. The confidentiality will last until that flow-on title or any subsequent flow-on title, has terminated c) The Director - General may extend the period of confidentiality	Noted.	Not triggered
Mining Lease 1583	10	Terms of the non-exclusive licence The terms of the non-exclusive copyright licence granted under condition 8 (a) are a) the Minister may sub-licence others to publish, print, adapt and reproduce by not on-licence reports b) the Minister and any sub-licensee will acknowledge the lease holders and any identifiable consultant's ownership of copyright in any reproduction of the reports, including storage of reports onto an electronic database	Noted.	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
		c) the lease holder does not warrant ownership of all copyright works in any report and, the lease holder will use best endeavours to identify those parts of the report for which the lease holder owns the copyright d) there is no royalty payable by the Minister for the licence e) if the lease holder has reasonable grounds to believe that the Minister has exercised his rights under the non-exclusive copyright licence in a manner which adversely affects the operations of the lease holder, that licence is revocable on the giving of a period of not less than three months notice.		
Mining Lease 1583	12	Safety Operations must be carried out in a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill holes shafts and excavations must be appropriately protected, to the satisfaction of the Secretary, to ensure that access to them by persons and stock is restricted. Abandoned shafts and excavations opened up or used by the lease holder must be filled in or otherwise rendered safe to a standard acceptable to the Secretary,	Safety was not assessed as part of this audit.	Not assessed
Mining Lease 1583	15	Exploratory Drilling 1) At least twenty eight days prior to commencement of drilling operations the lease holder must notify the relevant Department of Planning regional hydrogeologist of the intention to drill exploratory drill holes together with information on the location of the proposed holes 2) If the lease holder drills exploratory drill holes he must satisfy the Secretary that a) all cored holes are accurately surveyed and permanently marked in accordance with Departmental guidelines so that their location can be easily established; b) all holes cored or otherwise are sealed to prevent the collapse of the surrounding surface c) all drill holes are permanently sealed with cement plugs to prevent surface discharge of groundwaters d) if any drill hole meets natural or noxious gases it is plugged or sealed to prevent their escape; e) if any drill hole meets an artesian or sub-artesian flow it is effectively sealed to prevent contamination of aquifers f) once any drill hole ceases to be used the hole must be sealed in accordance with Departmental guidelines. Alternatively, the hole must be sealed as instructed by the Secretary g) once any drill hole ceases to be used the land and its immediate vicinity is left in a clean, tidy and stable condition	1) Sighted letter to DRE dated 15.09.14 indicating intention to drill three boreholes and providing borehole locations. One of these boreholes (CLRP21) is located within ML1583. Notification was also provided to the NSW Office of Water (now DPI Water). Notification was also provided to DRE for the intention to drill borehole CL1119 (located in ML 1583) by letter dated 30.07.14. 2a) all holes are surveyed using GPS. 2b) All holes reported to be capped. CLRP 17 was observed to be capped during site inspection. Not all holes observed. 2c) holes were reportedly fully grouted with cement. 2d) gas is not generally encountered. 2e) no artesian flow was reported to have been observed. 2f) holes were grouted as indicated above. 2g) Observed CLRP 17 during site inspection and noted to have been left in a clean, tidy and stable condition.	Compliant
Mining Lease 1583	16	Prevention of Soil Erosion and Pollution Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining operations plan. For the purpose of this condition, water shall be taken to include any watercourse, water body or groundwater's, The lease holder must observe and perform any instructions given by the Secretary in this regard	Operations in the Mining Lease 1583 area included development and extraction workings and exploration drilling. No incidents of pollution were reported to have occurred in the area covered by ML 1583.	Compliant
Mining Lease 1583	17	Transmission Lines, Communication Lines and Pipelines Operations must not interfere with or impair the stability or efficiency of any transmission line, communication line, pipeline or any other utility on the lease area without the prior written approval of the Secretary and subject to any conditions he may stipulate.	No issues reported or observed.	Compliant
Mining Lease 1583	19	Roads and Tracks a) Operations must not affect any road unless in accordance with an accepted Mining Operations Plan or with the prior written approval of the Secretary and subject to any conditions he may stipulate. (b) The lease holder must pay to the designated authority in control of the road (generally the local council or the Roads and traffic Authority) the cost incurred in fixing any damage to roads caused by operations carried out under the lease, less any amount paid or payable from the Mine Subsidence Compensation Fund.	a) Site reported that no interference of roads has occurred. b) Roads are used every week to two weeks by the site for general monitoring, and more for exploration drilling. Site pays a nominal (less than \$3,000 per year) sum to State Forests. Agreements with State Forests were not sighted. The previous IEA noted that some roads used by Clarence were not well maintained and were impacted by erosion and recommended that Clarence enter into dialogue with State Forests regarding how the condition of roads may be improved. This was not actioned and is still considered relevant.	Compliant OFI 15 CLR IEA 2016 As per previous IEA, discuss with State Forests how the condition of the roads could be improved.

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Mining Lease 1583	23	<p>Resource Recovery</p> <p>a) Notwithstanding any description of mining methods and their sequence or of proposed resource recovery contained within the Mining Operations Plan, if at any time the Secretary is of the opinion that minerals which the lease entitles the lease holder to mine and which are economically recoverable at the time are not being recovered from the lease area, or that any such minerals which are being recovered are not being recovered to the extent which should be economically possible or which for environmental reasons are necessary to be recovered, he may give notice in writing to the lease holder requiring the holder to recover such minerals.</p> <p>(b) The notice shall specify the minerals to be recovered and the extent to which they are to be recovered, or the objectives in regard to resource recovery, but shall not specify the processes the lease holder shall use to achieve the specified recovery</p> <p>(c) The lease holder must, when requested by the Secretary, provide such information as the Secretary may specify about the recovery of the mineral resources of the lease area,</p> <p>d) The Secretary shall issue no such notice unless the matter has firstly been thoroughly discussed with and a report to the Secretary has incorporated the views of the lease holder.</p> <p>e) The lease holder may object to the requirements of any notice issued under this condition and on receipt of such an objection the Minister shall refer it to a Warden for inquiry and report under Section 334 of the Mining Act, 1992.</p> <p>f) After considering the Warden's report the Minister shall decide whether to withdraw, modify or maintain the requirements specified in the original notice and shall give the lease holder written notice of the decision. The lease holder must comply with the requirements of this notice</p>	No notices as indicated have been received by Clarence. SMP Approvals suggest general approval of approach.	Not triggered
Mining Lease 1583	24	<p>Indemnity</p> <p>The lease holder must indemnify and keep indemnity the Crown from and against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses which may be brought against the lease holder or which the lease holder may incur in respect of any accident or injury to any person or property which may arise out of the construction, maintenance or working of any workings now existing or to be made by the lease holder within the lease area or in connection with any of the operations notwithstanding that all other conditions of this lease shall in all respects have been observed by the lease holder or that any such accident or injury shall arise from any act or thing which the lease holder may be licensed or compelled to do</p>	Noted.	Not triggered
Mining Lease 1583	25	<p>Security</p> <p>a) A security in the sum of \$50,000.00 must be given and maintained with the Minister by the lease holder for the purpose of ensuring the fulfilment by the lease holder of obligations under this lease. If the lease holder fails to fulfil any one or more of such obligations the said sum may be applied at the discretion of the Minister towards the cost of fulfilling such obligations, For the purpose of this clause the lease holder shall be deemed to have failed to fulfil the obligations of this lease If the lease holder fails to comply with any condition or provision hereof, any provision of the Act or regulations made there under or any condition or direction imposed or given pursuant to a condition or provision hereof or of any provision of the Act or regulations made there under</p> <p>b) The lease holder must provide the security required by sub-clause (a) in one of the following forms</p> <p>i) cash,</p> <p>ii) a security certificate in a form approved by the Minister and issued by an authorised deposit - taking institution</p>	<p>A spreadsheet of securities held by Clarence was sighted and indicated that the required security was held, with Security Certificate 23081002 held for CCL 705, ML1353 and ML1354. The amount of security held under this Certificate is \$9,267,851.52 calculated in November 2015 and submitted to DRE on 4.03.16.</p> <p>A copy of the Bank Guarantee was not made available or sighted, hence compliance with the condition could not be verified.</p>	<p>Not Verified</p> <p>As per CCL Condition 26</p>

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations																				
Mining Lease 1583	27	<p>Prescribed Dam</p> <p>a) Notwithstanding any Mining Operations Plan, the lease holder must not mine within any part of the lease area which is within the notification area of the Lithgow and Lithgow 2 Dam without the prior written approval of the Minister and subject to any conditions he may stipulate.</p> <p>b) Where the lease holder desires to mine within the notification area he must:</p> <p>(i) at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and</p> <p>ii) provide such information as the Minister may direct.</p> <p>(C) The Minister must not, except in the circumstances set out in subparagraph (ii), grant approval unless subparagraph (i) of this paragraph has been complied with.</p> <p>(i) This sub-paragraph is complied with if:</p> <p>(a) the Dams Safely Committee as constituted by Section 7 of the Dams Safety Act 1978 and the owner of the dam have been notified in writing of the desire to mine refined to in paragraph (B).</p> <p>(b) the notifications referred to in clause (a) are accompanied by a description or plan of the area to be mined.</p> <p>(c) the Director General has complied with any reasonable request made by the Dams Safety Committee or the owner of the dam for further information in connection with the mining proposal.</p> <p>(d) the Dams Safety Committee has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and</p> <p>(e) where the Dams Safety Committee has made recommendations the approval is in terms that are:</p> <p>(i) in accordance with those recommendations;or</p> <p>(ii) where the Minister does not accept those recommendations or any of them – in accordance with a determination under subparagraph (ii) of this paragraph</p> <p>ii) Where the Minister does not accept the recommendations of the Dams Safety Committee or where the Dams Safety Committee has failed to make recommendations and has not informed the Minister in writing that it does not propose to make any recommendation, the relations to matters dealing with the safety of the dam :</p> <p>a) as determined by agreement between the Minister and the Minister administering the Dams Safety Act 1978 or</p> <p>b) in the event of failure to reach such agreement - as determined by the Premier</p> <p>d) The Minister, on notice from the Dams Safety Committee, may at any time or times</p> <p>i) cancel any approval given where a notice pursuant to Section 18 of the Dams Safety Act 1978 is given</p> <p>ii) suspend for a period of time, alter, omit from or add to any approval given or conditions impose</p>	<p>Mining had occurred within the notification area of Lithgow and Lithgow 2 Dams during the audit period. Clarence put in three applications with the Dam Safety Committee (DSC) and received DSC endorsement and subsequently DRE approval as summarised below.</p> <table><tr><td></td><td>Date of Clarence Application</td><td>Date of DSC Endorsement</td><td>Date of DRE Approval</td></tr><tr><td>Clarence – 1</td><td>Feb 2010</td><td>14.07.10</td><td>19.07.10</td></tr><tr><td>Clarence -1 (minor variations)</td><td>Nov 2010</td><td>8.12.10</td><td>21.12.10</td></tr><tr><td>Clarence -2</td><td>8.03.12</td><td>22.03.12</td><td>28.03.12</td></tr><tr><td>Clarence -3</td><td>9.05.12</td><td>22.05.12</td><td>29.05.12</td></tr></table> <p>The DRE approvals were all conditional subject to observance of the DSC conditions. The auditors did not assess compliance with these conditions.</p>		Date of Clarence Application	Date of DSC Endorsement	Date of DRE Approval	Clarence – 1	Feb 2010	14.07.10	19.07.10	Clarence -1 (minor variations)	Nov 2010	8.12.10	21.12.10	Clarence -2	8.03.12	22.03.12	28.03.12	Clarence -3	9.05.12	22.05.12	29.05.12	Compliant
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Mining Lease 1583	28	<p>Catchment Area</p> <p>a) The lease holder shall carry out operations in such a way as to conform strictly to all provisions of the Sydney Water Catchment Management Act 1998 and the regulations there under applying to the prevention of pollution of the Warragamba Outer Catchment Area or the preservation of the purity of the water supply provided thereby or derived there from or for the protection of the property of Sydney Catchment Authority (hereinafter referred to as the 'the Authority) on the Outer Catchment Area and also to all requirements of the Authority from time to time under the said Act or any of the regulations for the time being in force</p> <p>b) If the lease holder shall at any time be using or about to use any process which in the opinion of the Authority is likely to pollute the Outer Catchment Area or the water supply or to endanger any property of the Authority on the Outer Catchment Area the lease holder upon service of a notice in writing under the hand of the Minister to do so shall</p> <p>i) discontinue the use of such process immediately, or</p> <p>ii) thereafter refrain from adopting such process at any time, as the case may require</p>	<p>Not considered relevant as Clarence did not undertake any exploratory drilling or other activities in the SCA catchment area during the audit period.</p>	Not triggered																				

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
		<p>c) The lease holder shall provide and maintain to the satisfaction of the Minister efficient means to prevent the contaminable, pollution, erosion or siltation of any stream or watercourse or Outer Catchment Area and shall observe any instruction given or which may be given by the Minister with a view to preventing or minimising the contamination, pollution or siltation of any stream watercourse or Outer Catchment Area</p> <p>d) The lease holder hereby covenants with Us Ours Heirs and Successors and as a separate covenant the lease holder hereby covenants with the Authority and its Successors that the lease holder shall at all times hereafter save harmless and keep Us and the said Authority and Our Heirs and Successors and the Successors of the said Authority indemnified from payment of compensation and from and against all actions proceedings claims and demands in respect of any injury loss of damage arising out of or in any way connected with any interference with or deprivation or loss of access to the land and premises of this authority which may occur by reason of any works or operations undertaken or carried out by the said Authority or arising out of or in any way connected with any discontinuance or alteration of any process consequent upon the service of a notice in pursuance of the provisions of Condition 2S(b) or arising out of or in any way connected with the operation of any regulations relating to Outer Catchment Areas in force at the date hereof or made by the said 'Authority at any time hereafter and the lease holder hereby agrees that for the purpose of this condition the said Authority shall be deemed to be a party to this authority</p>		
Mining Lease 1583	29	<p>The lease holder shall</p> <p>a) Make such provisions for sanitation as may be directed by the Authority and shall at all times observe and perform any requirements of the said Authority respecting sanitation</p> <p>b) not establish any camps or habitations within any area under the control of the Authority unless with the consent of the Authority.</p> <p>(c) Not sink any drill hole within the stored waters on the subject area nor within 40 metres of the top water level thereof unless with the consent of the Authority.</p> <p>(d) Not sink any drill hole within any watercourse on the Warragamba Outer Catchment Area nor within 100 metres thereof unless with the consent of the Authority.</p> <p>(e) Not interfere with or impede the use of the Authority tracks of endanger their stability in any way by reason of the operations,</p> <p>(f) Not construct any road to the sites of any drill holes unless with the consent of the Authority to the proposed route and type of road construction.</p> <p>g) Not interfere in any way with any fences on or adjacent to the Warragamba Outer Catchment Area unless with the consent in writing of the owner thereof or the Authority.</p> <p>h) Give twenty eight days notice to the General Manager, Catchment Operations and Major Projects, Sydney Catchment Authority, Penrith, of its intention to commence drilling operations.</p> <p>i) Not cut or remove any timber except such as directly obstructs or prevents the carrying on of operations and the lease holder shall obtain the consent in writing of the Authority before making use of the timber so cut for other than in connection with operations.</p> <p>j) Complete work in relation to rehabilitation within the Warragamba Outer Catchment Area before termination of the authority to the satisfaction of the Authority</p>	Not considered relevant as Clarence did not undertake any exploratory drilling or other activities in the SCA catchment area during the audit period.	Not triggered
Subsidence Management Plan 900 Area Approval	1	The Leaseholder must carry out the activity strictly in accordance with SMP Approved Plan	<p>Approval sighted, dated 21.01.14.</p> <p>Two variations to the Approval have been approved – the second variation approval date being 10.02.15.</p> <p>Compliance with Approved Plan is driven by requirements under Clause 88 approval, via Mines Inspectorate</p> <p>See Main report for discussion on Subsidence Management</p>	Compliant
Subsidence Management Plan 900 Area Approval	2	<p>The Leaseholder must carry out the activity generally in accordance with the SMP subject to the conditions of this Approval.</p> <p>In the event of any inconsistency between the conditions of this Approval and the SMP, the conditions of this Approval prevail to the extent of any inconsistency</p>	See Main report for discussion on Subsidence Management	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 900 Area Approval	3	Where this Approval requires actions to be undertaken by the Leaseholder, including remediation of subsidence impacts, the obligation continues until the Director General notifies the Leaseholder that the action has been completed to his or her satisfaction	Not triggered	Not triggered
Subsidence Management Plan 900 Area Approval	4	The Director General may vary the conditions of this Approval by notice in writing	Not triggered. Variations have been approved following requests by Clarence Colliery.	Not triggered
Subsidence Management Plan 900 Area Approval	5	The Director General may at his or her discretion suspend or revoke this Approval if a- the Leaseholder fails to adhere to any condition of the Approval; or b- the head of any other government authority requests suspension or revocation on the basis of the Lease holder's non-compliance, or potential non-compliance, with legislation administered by that agency related to this Approval	Not triggered	Not triggered
Subsidence Management Plan 900 Area Approval	6	General Obligation to Minimise Harm to the Environment The Leaseholder must implement the SMP (as amended by the conditions of this Approval) and carry out any additional practicable measures necessary to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the activity. Where prevention can not be achieved the leaseholder is to demonstrate minimisation of harm to the environment that may result from the construction, operation, or rehabilitation of the activity.	See Main report for discussion on Subsidence Management	Compliant
Subsidence Management Plan 900 Area Approval	7	Notification of Approval The Proponent must give notice of this SMP approval with 30 days to the DP&I, NOW, OEH, Council, MSB, the local Aboriginal Land Council the owners/ operators of any infrastructure and landowners in the application area and any relevant government agencies of stakeholders that the Director General's approval of the SMP has been granted	A notification letter dated 31.01.14 was sighted to the agencies listed, plus some other organisations.	Compliant
Subsidence Management Plan 900 Area Approval	8	Implementation of Approval Any plans, programmes, reports or strategies required as a condition of this Approval must be developed having regard to any guidelines adopted by the Director General for the purpose of subsidence management and mine rehabilitation	Plans, programs and management strategies required under the SMP Approval have been developed with approval from DRE, hence the condition is considered compliant.	Compliant
Subsidence Management Plan 900 Area Approval	9	The Leaseholder must implement any plan, programme or strategy required and approved pursuant to this Approval. Note: The Leaseholder may at any time submit an amended plan programme or strategy for approval. Once approved the amended plan programme or strategy must be implemented however up until the date of approval the Leaseholder must continue to implement the previously approved plan programme or strategy.	See Main report for discussion on Subsidence Management	Compliant
Subsidence Management Plan 900 Area Approval	10	Any modifications to plans, programmes or strategies already approved for the purposes of the conditions of this Approval must have regard to the matters set out in condition 8. Amended plans, programmes or strategies submitted for approval must be accompanied by all relevant supporting documentation to assist in the assessment of the amendment or modification. Note: This condition relates to plans, programmes and strategies required by the conditions of this Approval - if does not apply to variations to the SMP or the SMP Approved Plan which must be done in accordance with the requirements of the Mining Act, the conditions of title and the variation procedures identified in the SMP guidelines	Two amendments to the plan have been made with approval from DRE e.g. amendment for 903 dated 1.12.14. Each End of Year Report details all variations completed for that year.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 900 Area Approval	11	<p>Directions</p> <p>The Leaseholder must comply with any written direction given by the Director General, Director Environmental Sustainability, Director Mine Safety Operations or Principal Subsidence Engineer relating to:</p> <ul style="list-style-type: none"> a- the implementation of any aspect of the SMP or an approved plan, programme or strategy; b- assessing or reviewing the adequacy, effectiveness, or coverage of any approved plan, programme or strategy or any aspect of the SMP; c- the type, timing and/or location of monitoring of baseline conditions, subsidence or subsidence impacts d- any reporting requirement under this approval e- the carrying out of works to address subsidence impacts; and f- the carrying out of any studies or investigations related to subsidence or subsidence impacts and the reporting of any findings or conclusions. <p>The obligations under this condition prevail over any other obligation under this Approval.</p> <p>Note: Compliance with a written direction will not operate as a defence to a breach of any obligation under this approval that occurred prior to the Direction being given</p>	No written directions were reported by Clarence to have been issued.	Not triggered
Subsidence Management Plan 900 Area Approval	12	<p>Subsidence Monitoring</p> <p>The Leaseholder must submit to the Principal Subsidence Engineer for approval a subsidence monitoring programme for the panels which are the subject of this Approval. This programme must include:</p> <ul style="list-style-type: none"> a- inspection regimes b- layout of monitoring points c- parameters to be measured d- monitoring methods and accuracy e- timing and frequencies of surveys and inspections f- recording and reporting of monitoring results <p>The leaseholder must not commence pillar extraction prior to the subsidence monitoring programme being approved.</p> <p>Note: The programme should be submitted to the principle subsidence engineer at least 30 days prior to the expected commencement of operations to enable sufficient time for the assessment of the programme. The Principal Subsidence Engineer may require the provision of further information to assist in the assessment of the programme or a resubmission of the programme if it is considered inadequate, Complex issues or the need for additional information or a resubmission of the programme may require a longer assessment period</p>	Subsidence and Underground Monitoring program dated 24.01.14 sighted and noted to be available on Centennial website.	Compliant
Subsidence Management Plan 900 Area Approval	13	<p>Environmental Monitoring</p> <p>The Leaseholder must submit to the Director Environmental Sustainability for approval an Environmental Monitoring Plan (EMP) for the panels which are the subject of this approval. This plan must address subsidence impacts on:</p> <ul style="list-style-type: none"> a) surface water and groundwater and dependent ecosystems; b) Newnes Plateau shrub swamps and hanging swamps including dependence on groundwater levels and quality for terrestrial and aquatic flora and fauna; c) Bungleboori Creek d) Cliffs, pagodas and steep slopes; e) archaeological sites <p>The leaseholder shall ensure that underground mining does not result in any more than negligible environmental consequences to the aforementioned features.</p> <p>The leaseholder must not operate other than in accordance with an EMP approved by the Director Environmental Sustainability. This Plan must address subsidence impacts above and must include:</p> <ul style="list-style-type: none"> i) a detailed monitoring programme ii) trigger levels for subsidence impacts that require actions and responses; iii) the procedures that would be followed in the event that the monitoring Indicates an exceedance of trigger levels iv) measures to mitigate, remediate and/or compensate any identified impacts v) a protocol for the notification of identified exceedances of the trigger levels vi) a contingency plan 	<p>Environmental Monitoring Program submitted to DRE was approved on 19.06.14. This was followed with a variation request to the Plan. An approval for the variation was sighted dated 4.12.14.</p> <p>Monitoring required of the EMP included: Flora and Fauna (3 locations); groundwater (CLRP18 and 21; Photo Monitoring (at 3 locations).</p> <p>Groundwater monitoring is covered in the main report.</p> <p>Reporting of results is via the Subsidence Management Status Reports (SMSRs) and End of Year Reports.</p> <p>The 2015 End of Year Report provided a summary of the monitoring required of the EMP. This appeared to address the monitoring requirements of the EMP; however a complete reconciliation of monitoring against the plan was not undertaken as part of the audit.</p> <p>Further discussion of ecological monitoring is provided below:</p> <p>Centennial commissioned consultants to conduct seasonal vegetation monitoring on the Newnes Plateau across its three western mines (Angus Place, Springvale and Clarence). The auditors sighted the 2011 Annual Flora Monitoring Report (University of Queensland) and the 2014 Spring and Annual Report (Gingra Ecological Surveys). These included species richness and composition monitoring within 20m x 20 m plots at 10 sites for Clarence.</p> <p>Fauna monitoring was undertaken by Biodiversity Monitoring Services and was reported in the 2014 AEMR to have been undertaken in the 700 Area (Eastern, Western and Outbye), 800 Area (Eastern portion) and the 900 Area.</p> <p>The auditors sighted examples of monitoring reports for the Western SMP areas (2011 Annual Fauna Monitoring Report by Biodiversity Monitoring Services) and the 900 SMP area (Fauna Monitoring Program Panels 913 and 917 2014). A variety of survey techniques were employed to target small mammals (including bats), reptiles, birds and amphibians. Targeted searches were conducted for threatened species such as the Blue Mountains Water Skink and the Giant Dragonfly.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
		<p>This Plan must be prepared in consultation with relevant landholders and government agencies.</p> <p>This EMP must be developed in sufficient time to allow two years data to be collected prior to extraction commencing, unless otherwise authorised by the Director Environmental Sustainability.</p> <p>Note: The Plan should be submitted to the Director Environment Sustainability at least 30 days prior to the expected commencement of operation to enable sufficient time for the assessment of the plan. The Director Environmental Sustainability may require the provision of further information or a resubmission of the plan if it is considered inadequate. Complex issues or the need for additional information or a resubmission of the programme may require a longer assessment period.</p>		
Subsidence Management Plan 900 Area Approval	14	<p>Infrastructure and property management</p> <p>The Leaseholder must submit to the Director Mine Safety Operations for approval management plans for the following infrastructure that may be affected by subsidence. These plans must be developed in consultation with:</p> <ul style="list-style-type: none"> a) the owners/operators of the infrastructure; and b) any Government Agency with a regulatory role for the infrastructure. <p>The Leaseholder must not cause any subsidence impacts to any of the infrastructure listed below prior to the management plans for the said infrastructure being approved:</p> <ul style="list-style-type: none"> i) Electricity Transmission Lines; ii) Any other infrastructure if required by the Director of Mine Safety Operations 	<p>Management plans for the infrastructure were sighted dated 24.02.14. Consultation was required with Endeavour Energy which is noted in the back of the plan.</p> <p>Clarence reported that no subsidence impacts had occurred with the referenced infrastructure.</p>	Compliant
Subsidence Management Plan 900 Area Approval	15	<p>Public Safety</p> <p>The Leaseholder must prepare and implement a public safety management plan to ensure public safety in any structures, houses and surface areas that may be affected by subsidence, to the satisfaction of the Director, Mine Safety Operations.</p> <p>The plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) identification of any areas, man-made structures, facilities and infrastructure, which are hazardous or could become hazardous due to subsidence impacts; b) regular monitoring of areas or infrastructure/structures posing safety risks c) regular monitoring of stability of any areas with cliff formations and/or steep slopes that may be affected by subsidence d) measures to prevent, mitigate and promptly remediate hazards and safety risks referred to in (a) above; e) erection of warning signs; f) entry restrictions; g) backfilling of dangerous surface cracks; h) securing of unstable built structures or rockmass where required and appropriate; and i) provision of timely notification of proposed mining progress to the community and any other relevant stakeholders where management of public safety is required. <p>The Leaseholder must not cause subsidence impacts prior to the Public Safety Management Plan being approved.</p>	<p>The approval for the Public Safety Management Plan for 900 Area was sighted dated 23.04.14. Monitoring and inspection provisions are generally similar to other approved SMPs, with evidence of implementation via Status Reports and End-of-Year reports.</p>	Compliant
Subsidence Management Plan 900 Area Approval	16	<p>Incident and Ongoing Management Reporting</p> <p>The Leaseholder must, within 24 hours of becoming aware of the occurrence, notify</p> <ul style="list-style-type: none"> a) the Principal Subsidence Engineer b) the Mine Subsidence Board c) The Department of Water and Energy d) Other relevant stakeholders any Government Agency with a regulatory role if they request such notification of the following <ul style="list-style-type: none"> i) Any significant unpredicted and/or higher-than predicted subsidence and/or abnormalities in the development of subsidence; ii) Any exceedance of predicted impacts on groundwater resources and/or the natural environment that may have been caused (whether partly or wholly) by subsidence; iii) Any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by mining; 	Not triggered for this Area.	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
		iv) Any significant subsidence-induced cracking and ground deformations observed in any surface areas within the SMP application area Note: Under Condition 11, the Leaseholder can be directed to, among other things, prepare a report on an incident reported under this condition. A report on the details of the incident, including likely or known causes response action and proposed responses will generally be required for incidents that involve material property or environmental damage or have the potential to cause such damage,		
Subsidence Management Plan 900 Area Approval	17	<p>The Leaseholder must prepare and maintain a Subsidence Management Status Report which must include but not be limited to:</p> <ul style="list-style-type: none"> a- the current face position of the panel being extracted; b- a summary of any subsidence management actions undertaken by the Leaseholder in the period subsequent to the last regular submission of the Status Report c- a summary of any comments, advice and feedback from consultation with stakeholders in relation to the implementation of this Approval (including the preparation, implementation and review of plans, programmes, reports or strategies required by this approval) undertaken or received in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder/s response to the comments, advice and feedback given by the stakeholders d- a summary of the observed and/or reported subsidence impacts, incidents, services difficulties, community complaints, and any other relevant information reported to the Leaseholder in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to these impact, incidents, services difficulties and complaints; e- a summary of subsidence development based on monitoring information compared with any defined triggers and/or the predicted subsidence to facilitate early detection of potential subsidence impacts; f- a summary of the adequacy, quality and defectiveness of the implemented management processes based on the monitoring and consultant information summarised above; and g- a statement regarding any additional and/or outstanding management actions to be undertaken or the need for early repairs or emergency procedures to ensure adequate management of any potential subsidence impacts due to mining. <p>The Subsidence Management Status Report must be updated at least every 14 days to reflect any changes in the information required to be included in the Report. The Status Report (as updated from time to time) must be submitted to the Principal Subsidence Engineer and the Department of Water and Energy from the date of this Approval. The Status Report (as updated from time to time) must be provided, upon request, to the Mine Subsidence Board, the Director of Environmental Sustainability, the Principal Subsidence Engineer, owners/operators of any infrastructure within the application area and relevant government agencies.</p>	<p>900 area has been included in Subsidence Management Status Reports (SMSRs) as appropriate (example is SMSR for period ending 30.06.14). SMSRs were observed to have been completed during the audit period on a frequency of 4 monthly. The SMSRs were reported by Clarence to have been accepted by DRE.</p> <p>Letters were sighted indicating that SMSRs are issued to the relevant parties listed as well as other agencies as considered appropriate.</p>	Compliant
Subsidence Management Plan 900 Area Approval	18	<p>Annual Report</p> <p>The Leaseholder shall prepare an annual report. This report shall be submitted to the Director General within twelve months of the date of this approval and annually thereafter. The annual report must:</p> <ul style="list-style-type: none"> a) include a summary of the subsidence and environmental monitoring results for the year; b) include an analysis of these monitoring results against the relevant; <ul style="list-style-type: none"> • impact assessment criteria; • monitoring results from previous panels; and • predictions in the SMP; c) identify any trends in the monitoring results over the life of the activity; and d) describe what actions were taken to ensure adequate management of any potential or actual subsidence impacts due to mining. <p>Note: The requirement of this condition may be satisfied via an Annual Review prepared under conditions of development consent or project approval.</p>	<p>Annual reports have prepared each year since 2010 and issued to various agencies prior to 31 March of the following year. Agencies included DPI, EPA, MSB, NoW, OEH and SCA.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 900 Area Approval	19	Access to Information Within 3 months of the submission of an Annual Report (as required by Condition 18) or the approval of a plan, programme or strategy required under this Approval or the SMP (or any subsequent revision of these documents), the Leaseholder must, to the satisfaction of the Director General: a- provide a copy of these document/s to all relevant agencies b- ensure that a copy of the relevant documents is made publicly available at the Leaseholders regional office and c- put a copy of the relevant documents on the Leaseholders website Note: Relevant agencies currently include MSB, OEH, NOW and DP&I.	Annual reports have prepared each year since 2010 and issued to various agencies prior to 31 March of the following year. Agencies included DPI, EPA, MSB, NoW, OEH and SCA. The most recent end of year report was available on the Centennial website.	Compliant
Subsidence Management Plan 900 Area Approval	20	Survey Marks At the completion of subsidence or otherwise as required by the Land and Property Management Authority. the functionality of any survey marks affected by subsidence must be fully restored to the satisfaction of the Land and Property Management Authority.	Not triggered	Not triggered
Subsidence Management Plan 900 Area Approval	21	Water Supply In the event of interruptions to water supplies (water quality and / or quantity) due to subsidence impacts on water supply systems and or sources caused by pillar extraction, the Leaseholder must provide without delay water supplies of equivalent quality and quantity to locations convenient to those affected within the SMP Application Area until such time the affected water supply system and / or sources are restored	Not triggered. No impacts have been recorded for water supplies due to subsidence impacts.	Not triggered
Subsidence Management Plan 800 Area Approval	1	The Leaseholder must carry out the activity strictly in accordance with SMP Approved Plan	See text in the main body of the report.	Compliant
Subsidence Management Plan 800 Area Approval	2	The Leaseholder must carry out the activity generally in accordance with the SMP subject to the conditions of this Approval. In the event of any inconsistency between the conditions of this Approval and the SMP, the conditions of this Approval prevail to the extent of any inconsistency	See text in the main body of the report.	Compliant
Subsidence Management Plan 800 Area Approval	3	Where this Approval requires actions to be undertaken by the Leaseholder, including remediation of subsidence impacts, the obligation continues until the Director General notifies the Leaseholder that the action has been completed to his or her satisfaction	Noted	Noted
Subsidence Management Plan 800 Area Approval	4	The Director General may vary the conditions of this Approval by notice in writing	Not triggered.	Not triggered
Subsidence Management Plan 800 Area Approval	5	The Director General may at his or her discretion suspend or revoke this Approval if a- the Leaseholder fails to adhere to any condition of the Approval; or b- the head of any other government authority requests suspension or revocation on the basis of the Lease holder's non-compliance, or potential non-compliance, with legislation administered by that agency related to this Approval	Not triggered.	Not triggered
Subsidence Management Plan 800 Area Approval	6	General Obligation to Minimise Harm to the Environment The Leaseholder must implement the SMP (as amended by the conditions of this Approval) and carry out any additional practicable measures necessary to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the activity Where prevention can not be achieved the leaseholder is to demonstrate minimisation of harm to the environment that may result from the construction, operation, or rehabilitation of the activity.	No material harm was observed due to subsidence impacts (this SMP review does not take into account the coal fines spill incident which is covered in the Main report).	Compliant (in relation to subsidence)
Subsidence Management Plan 800 Area Approval	7	Notification of Approval The Proponent must give notice of this SMP approval with 30 days to the DP&I, NOW, OEH, Council, MSB, the local Aboriginal Land Council the owners/ operators of any infrastructure and landowners in the application area and any relevant government agencies of stakeholders that the Director General's approval of the SMP has been granted	Not verified	Not verified

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 800 Area Approval	8	Implementation of Approval Any plans, programmes, reports or strategies required as a condition of this Approval must be developed having regard to any guidelines adopted by the Director General for the purpose of subsidence management and mine rehabilitation	See comments in the main report.	Compliant
Subsidence Management Plan 800 Area Approval	9	The Leaseholder must implement any plan, programme or strategy required and approved pursuant to this Approval. Note: The Leaseholder may at any time submit an amended plan programme or strategy for approval. Once approved the amended plan programme or strategy must be implemented however up until the date of approval the Leaseholder must continue to implement the previously approved plan programme or strategy.	See Main report for discussion on Subsidence Management	Compliant
Subsidence Management Plan 800 Area Approval	10	Any modifications to plans, programmes or strategies already approved for the purposes of the conditions of this Approval must have regard to the matters set out in condition 8. Amended plans, programmes or strategies submitted for approval must be accompanied by all relevant supporting documentation to assist in the assessment of the amendment or modification. Note: This condition relates to plans, programmes and strategies required by the conditions of this Approval - if does not apply to variations to the SMP or the SMP Approved Plan which must be done in accordance with the requirements of the Mining Act, the conditions of title and the variation procedures identified in the SMP guidelines	Not triggered	Not triggered
Subsidence Management Plan 800 Area Approval	11	Directions The Leaseholder must comply with any written direction given by the Director General, Director Environmental Sustainability, Director Mine Safety Operations or Principal Subsidence Engineer relating to: a- the implementation of any aspect of the SMP or an approved plan, programme or strategy; b- assessing or reviewing the adequacy, effectiveness, or coverage of any approved plan, programme or strategy or any aspect of the SMP; c- the type, timing and/or location of monitoring of baseline conditions, subsidence or subsidence impacts d- any reporting requirement under this approval e- the carrying out of works to address subsidence impacts; and f- the carrying out of any studies or investigations related to subsidence or subsidence impacts and the reporting of any findings or conclusions. The obligations under this condition prevail over any other obligation under this Approval. Note: Compliance with a written direction will not operate as a defence to a breach of any obligation under this approval that occurred prior to the Direction being given	No written directions issued.	Not triggered
Subsidence Management Plan 800 Area Approval	12	Subsidence Monitoring The Leaseholder must submit to the Principal Subsidence Engineer for approval a subsidence monitoring programme for the panels which are the subject of this Approval. This programme must include: a- inspection regimes b- layout of monitoring points c- parameters to be measured d- monitoring methods and accuracy e- timing and frequencies of surveys and inspections f- recording and reporting of monitoring results The leaseholder must not commence pillar extraction prior to the subsidence monitoring programme being approved. Note: The programme should be submitted to the principle subsidence engineer at least 30 days prior to the expected commencement of operations to enable sufficient time for the assessment of the programme. The Principal Subsidence Engineer may require the provision of further information to assist in the assessment of the programme or a resubmission of the programme if it is considered inadequate. Complex issues or the need for additional information or a resubmission of the programme may require a longer assessment period	Various Subsidence and Underground Monitoring programs have been submitted to DRE for approval. Version 5 was dated 19.03.15. Approvals were sighted for 810, 812 and 814 panels.	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 800 Area Approval	13	<p>Environmental Monitoring</p> <p>The Leaseholder must submit to the Director Environmental Sustainability for approval an Environmental Monitoring Plan (EMP) for the panels which are the subject of this approval. This plan must address subsidence impacts on:</p> <ul style="list-style-type: none"> a) surface water and groundwater (quality and quantity) and dependent ecosystems; b) Newnes Plateau shrub swamps and hanging swamps including dependence on groundwater levels and quality for terrestrial and aquatic flora and fauna; c) Dumbano Creek d) Cliffs, pagodas and steep slopes; e) archaeological sites f) fauna and flora; g) any other significant environmental feature that may be impacted by subsidence resulting from the proposed pillar mining. <p>The leaseholder must not operate other than in accordance with an EMP approved by the Director Environmental Sustainability. This Plan must address subsidence impacts above and must include:</p> <ul style="list-style-type: none"> i) a pre-mining inspection of swamps in the subject area to identify existing physical characteristics of the swamps and associated terrestrial and aquatic flora and fauna; ii) a detailed monitoring programme iii) trigger levels for subsidence impacts that require actions and responses; iv) the procedures that would be followed in the event that the monitoring Indicates an exceedance of trigger levels v) measures to mitigate, remediate and/or compensate any identified impacts vi) a protocol for the notification of identified exceedances of the trigger levels vii) a contingency plan <p>This Plan must be prepared in consultation with relevant landholders and government agencies.</p> <p>The Leaseholder must not cause subsidence impacts prior to the Environmental Management Plan being approved. This EMP must be developed in sufficient time to allow two years data to be collected prior to extraction commencing, unless otherwise authorised by the Director Environmental Sustainability.</p> <p>Note: The Plan should be submitted to the Director Environment Sustainability at least 30 days prior to the expected commencement of operation to enable sufficient time for the assessment of the plan. The Director Environmental Sustainability may require the provision of further information or a resubmission of the plan if it is considered inadequate. Complex issues or the need for additional information or a resubmission of the programme may require a longer assessment period.</p>	<p>An Environmental Monitoring program (for the 800 area) was sighted dated 21.05.14. This was submitted to DRE Environmental Sustainability Branch of Industry and Investment NSW and was approved on 19.06.14 with the 900 Area EMP.</p> <p>Monitoring required of the EMP included: Flora (8 locations); Fauna (3 locations); and groundwater (CLRP17 and 19).</p> <p>Groundwater monitoring is covered in the main report.</p> <p>Reporting of results is via the Subsidence Management Status Reports (SMSRs) and End of Year Reports.</p> <p>The 2015 End of Year Report provided a summary of the monitoring required of the EMP. This appeared to address the monitoring requirements of the EMP; however a complete reconciliation of monitoring against the plan was not undertaken as part of the audit.</p> <p>Further discussion of ecological monitoring is provided below:</p> <p>Centennial commissioned consultants to conduct seasonal vegetation monitoring on the Newnes Plateau across its three western mines (Angus Place, Springvale and Clarence). The auditors sighted the 2011 Annual Flora Monitoring Report (University of Queensland) and the 2014 Spring and Annual Report (Gingra Ecological Surveys). These included species richness and composition monitoring within 20m x 20 m plots at 10 sites for Clarence.</p> <p>Fauna monitoring was undertaken by Biodiversity Monitoring Services and was reported in the 2014 AEMR to have been undertaken in the 700 Area (Eastern, Western and Outbye), 800 Area (Eastern portion) and the 900 Area.</p> <p>The auditors sighted examples of monitoring reports for the Western SMP areas (2011 Annual Fauna Monitoring Report by Biodiversity Monitoring Services) and the 900 SMP area (Fauna Monitoring Program Panels 913 and 917 2014). A variety of survey techniques were employed to target small mammals (including bats), reptiles, birds and amphibians. Targeted searches were conducted for threatened species such as the Blue Mountains Water Skink and the Giant Dragonfly.</p> <p>Not all monitoring reports were reviewed however, the program appeared to be implemented.</p>	Compliant
Subsidence Management Plan 800 Area Approval	14	Left Blank Intentionally		

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 800 Area Approval	15	<p>Public Safety The Leaseholder must prepare and implement a public safety management plan to ensure public safety in any structures, houses and surface areas that may be affected by subsidence, to the satisfaction of the Director, Mine Safety Operations.</p> <p>The plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) identification of any areas, man-made structures, facilities and infrastructure, which are hazardous or could become hazardous due to subsidence impacts; b) regular monitoring of areas or infrastructure/structures posing safety risks c) regular monitoring of stability of any areas with cliff formations and/or steep slopes that may be affected by subsidence d) measures to prevent, mitigate and promptly remediate hazards and safety risks referred to in (a) above; e) erection of warning signs; f) entry restrictions; g) backfilling of dangerous surface cracks; h) securing of unstable built structures or rockmass where required and appropriate; and i) provision of timely notification of proposed mining progress to the community and any other relevant stakeholders where management of public safety is required. <p>The Leaseholder must not cause subsidence impacts prior to the Public Safety Management Plan being approved.</p>	Public Safety Management Plan for 800 area was sighted dated 21.01.14. The Plan was approved by DRE on 23.04.14.	Compliant
Subsidence Management Plan 800 Area Approval	16	<p>Incident and Ongoing Management Reporting The Leaseholder must, within 24 hours of becoming aware of the occurrence, notify</p> <ul style="list-style-type: none"> a) the Principal Subsidence Engineer b) Director, Environmental Sustainability; c) the Mine Subsidence Board d) NSW Office of Water and d) Other relevant stakeholders any Government Agency with a regulatory role if they request such notification, of the following <ul style="list-style-type: none"> i) Any significant unpredicted and/or higher-than predicted subsidence and/or abnormalities in the development of subsidence; ii) Any exceedance of predicted impacts on groundwater resources and/or the natural environment that may have been caused (whether partly or wholly) by subsidence; iii) Any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by mining; iv) Any significant subsidence-induced cracking and ground deformations observed in any surface areas within the SMP application area <p>Note: Under Condition 11, the Leaseholder can be directed to, among other things, prepare a report on an incident reported under this condition. A report on the details of the incident, including likely or known causes response action and proposed responses will generally be required for incidents that involve material property or environmental damage or have the potential to cause such damage,</p>	Not triggered for this Area.	Not triggered

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 800 Area Approval	17	<p>The Leaseholder must prepare and maintain a Subsidence Management Status Report which must include but not be limited to:</p> <ul style="list-style-type: none"> a- the current face position of the panel being extracted; b- a summary of any subsidence management actions undertaken by the Leaseholder in the period subsequent to the last regular submission of the Status Report c- a summary of any comments, advice and feedback from consultation with stakeholders in relation to the implementation of this Approval (including the preparation, implementation and review of plans, programmes, reports or strategies required by this approval) undertaken or received in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder/s response to the comments, advice and feedback given by the stakeholders d- a summary of the observed and/or reported subsidence impacts, incidents, services difficulties, community complaints, and any other relevant information reported to the Leaseholder in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to these impact, incidents, services difficulties and complaints; e- a summary of subsidence development based on monitoring information compared with any defined triggers and/or the predicted subsidence to facilitate early detection of potential subsidence impacts; f- a summary of the adequacy, quality and defectiveness of the implemented management processes based on the monitoring and consultant information summarised above; and g- a statement regarding any additional and/or outstanding management actions to be undertaken or the need for early repairs or emergency procedures to ensure adequate management of any potential subsidence impacts due to pillar extraction. <p>The Subsidence Management Status Report must be updated at least every 14 days to reflect any changes in the information required to be included in the Report. The Status Report must be regularly submitted to the Principal Subsidence Engineer, NSW Office of Water, EPA and each operator of infrastructure referred to in condition 14 every four (4) months from the date of this Approval. In addition, the Status Report (as updated from time to time) must be provided, upon request, to the Mine Subsidence Board, the Director of Environmental Sustainability, the Principal Subsidence Engineer, owners/operators of any infrastructure within the application area and any other relevant stakeholders.</p>	800 area is included in Status reports that are prepared on a four monthly basis. SMSRs were sighted for the audit period.	Compliant
Subsidence Management Plan 800 Area Approval	18	<p>End of Year Report</p> <p>The Leaseholder shall prepare an end of year report. This report shall be submitted to the Director Environmental Sustainability, within the first three months of the subsequent year. The end of year report must:</p> <ul style="list-style-type: none"> a) include a summary of the subsidence and environmental monitoring results for the year; b) include an analysis of these monitoring results against the relevant; <ul style="list-style-type: none"> • impact assessment criteria; • monitoring results from previous panels; and • predictions in the SMP; c) identify any trends in the monitoring results over the life of the activity including trends in aquifers associated with aquitards and strata above and below them; and d) describe what actions were taken to ensure adequate management of any potential or actual subsidence impacts due to mining. 	End of Year reports have been prepared for each year of the audit period. The latest report for 2014 was sighted on the Centennial Website.	Compliant
Subsidence Management Plan 800 Area Approval	19	<p>Access to Information</p> <p>Within 3 months of the submission of an End of Year Report (as required by Condition 18) or the approval of a plan, programme or strategy required under this Approval or the SMP (or any subsequent revision of these documents), the Leaseholder must, to the satisfaction of the Director General:</p> <ul style="list-style-type: none"> a- provide a copy of these document/s to all relevant agencies b- ensure that a copy of the relevant documents is made publicly available at the Leaseholders regional office and c- put a copy of the relevant documents on the Leaseholders website <p>Note: Relevant agencies currently include MSB, EPA, NOW and DP&I.</p>	<p>Annual reports have prepared each year since 2010 and issued to various agencies prior to 31 March of the following year. Agencies included DPI, EPA, MSB, NoW, OEH and SCA.</p> <p>The most recent end of year report was available on the Centennial website.</p>	Compliant

Approval Name	Condition No	Condition Requirement	Comment/Evidence Sighted//	Compliance Status and Recommendations
Subsidence Management Plan 800 Area Approval	20	Survey Marks At the completion of subsidence or otherwise as required by the Land and Property Management Authority, the functionality of any survey marks affected by subsidence must be fully restored to the satisfaction of the Land and Property Management Authority.	Not triggered	Not triggered
Subsidence Management Plan 800 Area Approval	21	Water Supply In the event of interruptions to water supplies (water quality and / or quality) due to subsidence impacts on water supply systems and or sources caused by pillar extraction, the Leaseholder must provide without delay, water supplies of equivalent quality and quantity to locations convenient to those affected within the SMP Application Area until such time the affected water supply system and / or sources are restored	Not triggered. No impacts have been recorded for water supplies due to subsidence impacts.	Not triggered



Appendix B

Close out of previous IEA (URS, 2011) actions

Status of close out of indeterminate, non-compliances and recommendations of previous IEA (URS, 2011)

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
DA 504-00 Development Consent	S2- 8	<p>The Applicant shall ensure that all new buildings, structures, and any alterations to existing buildings and structures are constructed in accordance with the relevant requirements of the BCS.</p> <ul style="list-style-type: none"> Under Part 4A of the EP&A Act, the Application is required to obtain construction and occupation certificates for any building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of development. 	Indeterminate (Not verified)	The previous IEA could not determine compliance for the erection of two sheds. This issue was not revisited during this IEA as no new evidence was available.	Not assessed
DA 504-00 Development Consent	S3- 3	<p><u>Pollution of Waters</u></p> <p>Except as may be expressly provided by an Environment Protection Licence, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997 during the carrying out of the development.</p>	Non-Compliant	The previous IEA assessed this Condition as non-compliant on the basis of exceedances with EPL limits. This Condition was again assessed as non-compliant on the basis of the July 2015 incident.	Non-Compliant
DA 504-00 Development Consent	S3- 6	<p>Commitments articulated in the endorsed Water Management Plan include:</p> <ul style="list-style-type: none"> Site surface water management arrangements, including separation of clean and dirty water, sediment control structures and treatment; Site groundwater management arrangements, including extraction, dewatering and treatment; Implementation of surface water and groundwater monitoring as described in the separate Environmental Monitoring Program; Meteorological monitoring; Reporting of monitoring results; and through the AEMR (as per DA 504-00 S5-5) Audit and review. 	<p>Non-Compliant (Implementation)</p> <p>Recommendation:</p> <p>It is recommended that Clarence Colliery prepare a local amendment to its adopted Centennial Coal Incident Reporting procedure reflecting its commitment to routinely report all non-compliances to DoP and DECCW or else obtain re-endorsement of a revised Water Management Plan. It is recommended Clarence implement measures to address localised erosion issues near access roads to the main dam.</p>	<p>Evidence that exceedances were reported to the DPE and EPA were sighted.</p> <p>Local erosion issues appeared to have been rectified.</p>	Completed

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
DA 504-00 Development Consent	S3- 14	Commitments articulated in the endorsed Air Quality Monitoring Program relate to the implementation of particulate and deposited dust monitoring (with nominated frequency, duration and method), notification in the event of an exceedance of adopted performance criteria and the annual internal audit and update (as required) of the Program.	Non-Compliant (Implementation 2007 - December 2009) Recommendation: It is recommended that TSP and PM ₁₀ monitoring arrangements as described in the endorsed Air Quality Monitoring Program continue to be implemented.	TSP and PM ₁₀ monitoring was undertaken during the audit period.	Completed
DA 504-00 Development Consent	S3- 16	Commitments articulated in the endorsed Environmental Noise Management Plan relate to the implementation of noise monitoring (with nominated frequency, duration and method), train loading and rail operations noise mitigation measures, notification in the event of an exceedance of adopted performance criteria and the annual internal audit and update (as required) of the Program.	Non-Compliant (Implementation) Recommendation: It is recommended that noise monitoring be consistently undertaken in accordance with the endorsed Environmental Noise Management Plan.	Noise monitoring was undertaken in accordance with the Plan during the audit period.	Completed
DA 504-00 Development Consent	S3- 26	<u>Dangerous Goods</u> The Applicant shall ensure that the storage, handling, and transport of dangerous goods is done in accordance with the relevant Australian Standards, particularly AS 1940 and AS1596, and the Dangerous Goods Code.	Non-Compliant Recommendation: Implementation of corrective actions recommended by GHD in its AS1940:2004 compliance audit should continue, with a focus on those non-compliances assessed as critical and those items previously unable to be assessed.	The recommended actions from the GHD audit were entered into Pulse and closed out. The auditors sighted the Audit Action Report which outlined the 'Action Details' and 'Completion Details' for a total of 96 Actions. The auditors did not undertake a detailed or independent check of completion of the actions. It is noted that various issues related to hydrocarbon management were observed and raised in the report.	Completed

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
DA 504-00 Development Consent	S5- 1	<p>Commitments articulated in the endorsed Environmental Management Strategy include:</p> <ul style="list-style-type: none"> • Identification and evaluation of environmental aspects, potential impacts and subsequent development of mitigation measures; • Implementation of an inspection and monitoring program to assess the effectiveness of environmental management measures; • Annual review of the site's Water Management Plan, Air Quality Monitoring Plan and Environmental Noise Monitoring Plan; • Implementation of the site's Environmental Monitoring Program, including cumulative impact monitoring; • Non-compliance and emergency procedures, including notification of EPL/DC discharge criteria and notification of potential or actual material environmental harm; and • Community consultation. • Management review of EMS within 3 months of Independent Environmental Audit 	<p>Non-Compliant (Implementation)</p> <p>Recommendation:</p> <p>Refer DA 504-00 S3-14, DA 504-00 S3-16, DA 504-00 S3-17, EPL Condition R2.</p> <p>It is recommended that Clarence Colliery prepare a local amendment to its adopted Centennial Coal Incident Reporting procedure reflecting its commitment to routinely report all non-compliances to DoP and DECCW or else obtain re-endorsement of a revised Environmental Management Strategy</p>	Evidence that exceedances were reported to the DPE and EPA were sighted.	Completed
DA 504-00 Development Consent	S5- 3	<p>Commitments articulated in the endorsed Environmental Monitoring Plan include:</p> <ul style="list-style-type: none"> • Implementation of the Air Quality Monitoring Program; • Implementation of the Environmental Noise Management Plan monitoring requirements; • Implementation of surface water and groundwater monitoring; • Meteorological monitoring; • Reporting of monitoring results through the AEMR (as per DA 504-00 S5-5); and • Audit and review. 	<p>Non-Compliant (Implementation)</p> <p>Recommendation:</p> <p>Refer DA 504-00 S3-14, DA 504-00 S3-16, DA 504-00 S3-17, EPL Condition M6.1.</p>	The previous IEA assessed this condition as non-compliant on the basis of deficiencies in the implementation of elements of the Environmental Monitoring Plan. During this audit period the Environmental Monitoring Program was assessed to be generally implemented.	Completed

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
DA 504-00 Development Consent	S5- 5	<p><u>Annual Reporting</u></p> <p>The Applicant shall prepare and submit an AEMR to the Director-General and the relevant agencies.</p> <p>This report must:</p> <ul style="list-style-type: none"> (a) identify the standards and performance measures that apply to the development; (b) describe the works carried out in the last 12 months; (c) describe the works that will be carried out in the next 12 months; (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years; (e) include a summary of the monitoring results for the development during the past year; (f) include an analysis of these monitoring results against the relevant: <ul style="list-style-type: none"> — impact assessment criteria; — monitoring results from previous years; and — predictions in the EIS; (g) identify any trends in the monitoring results over the life of the development; (h) identify any non-compliance during the previous year; and (i) describe what actions were, or are being taken to ensure compliance. 	<p>Non-Compliant</p> <p>Recommendation:</p> <p>It is recommended that the site expand the content of its 2010 AEMR as proposed to include the previously omitted items.</p>	<p>The previous IEA identified that AEMRs did not include reporting of all water discharge monitoring parameters and that generally the AEMRS did not report trending of data over the life of the project e.g. water data.</p> <p>A review of the 2014 AEMR indicated all water discharge monitoring parameters were reported however trending of data over the life of the project was limited to groundwater levels.</p>	<p>Ongoing</p> <p>Refer to recommendations in Appendix A</p>

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
DA 504-00 Development Consent	S5- 12	During the life of the development, the Applicant shall: (a) make a summary of the results of all monitoring required under this consent publicly available both at the mine and on the Applicant's website; and (b) update these results on a regular basis (at least every 3 months), to the satisfaction of the Director-General. Note: The Applicant's environmental management plans/protocols should specify the reporting provisions for each environmental aspect.	Non-Compliant Recommendation: It is recommended that environmental monitoring results be updated on the site's website every 3 months as prescribed	Changes to the POEO Act now require holders of EPLs to publish results of monitoring required under the licence on a monthly basis. Clarence was complying with this requirement and monthly environmental monitoring reports were available on its website.	Completed
1976 Development Consent	5	Collection dam to be constructed before actual Mine workings begin.	Indeterminate	Assessed as indeterminate in previous IEA. No further assessment possible.	Not assessed
1976 Development Consent	7	Potable water to be of a standard as prescribed by the Health Commission of NSW.	Indeterminate	The previous IEA assessed this Condition as indeterminate based on monitoring data for a broader range of Australian Drinking Water Guideline parameters not being available. This is still the case and this IEA includes an OFI to develop and implement a monitoring program in accordance with the Australian Drinking Water Guidelines to ensure potable water meets required standards.	Ongoing Refer to recommendations in Appendix A
1993 Modified Development Consent	1	The applicant shall carry out the development generally in accordance with the 1975 Environmental Impact Statement, prepared by Dames & Moore, except as amended in the Statement of Environmental Effects prepared by R.W. Corkery & Co. dated April, 1993.	Indeterminate	The previous IEA assessed this condition as indeterminate based on the 1993 Statement of Environmental Effects not being provided. This IEA did not review the original EIS (1975) or the Statement of Environmental Effects (1993)	Not assessed

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
1993 Modified Development Consent	4	The applicant shall prepare, prior to the commencement of site works for Reject Emplacement Area III, a sediment and erosion control plan. The plan shall incorporate measures for the management of surface runoff, control of water discharge points and the conservation and protection of soil stockpiles. The plan shall be submitted to the Department of Conservation and Land Management for its approval and to Council for its information. All works shall be carried out in accordance with the approved plan and in consultation with the Department of Conservation and Land Management.	Indeterminate Current Plan exists that is considered to supersede this requirement for the period of the audit.	No further assessment possible.	Closed out
1993 Modified Development Consent	5	The applicant shall prepare, within Six (6) months of the commencement of operations for REA III, a detailed rehabilitation plan. This plan is to be submitted to the Department of Mineral Resources, Department of Conservation and Land Management and Council for approval.	Non-Compliant Recommendation It is recommended that a detailed rehabilitation plan is developed and implemented for the REAs.	This condition was assessed as non-compliant in the previous IEA as no detailed rehabilitation plan specific to REA III had been prepared and approved. Since then, Clarence engaged consultants GSS Environmental to prepare a Conceptual Rehabilitation and Mine Closure Plan (December 2012). However since the development of this plan Clarence reported that rehabilitation planning is largely undertaken through the MOP process.	Ongoing Refer recommendations in Appendix A
1994 Northern Lease Ext Area Development Consent	10	The applicant shall consult with the Soil Conservation Service prior to the construction of runoff diversion and erosion and sediment control works. Such works are to be constructed to the satisfaction of the Soil Conservation Service.	Indeterminate	No further assessment of historical compliance possible.	Closed out

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Environment Protection Licence 726	A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	Indeterminate Recommendation: Obtain a copy of the Original EPL Application and ensure compliance with the application.	The previous IEA assessed this Condition as non-compliant on the basis of exceedances with EPL limits. This Condition was again assessed as non-compliant on the basis of the July 2015 incident.	Non-Compliant
Environment Protection Licence 726	L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	Non-Compliant (refer L3.1 and L3.2)	The previous IEA assessed this Condition as non-compliant on the basis of exceedances with EPL limits. This Condition was again assessed as non-compliant on the basis of the July 2015 incident.	Non-Compliant
Environment Protection Licence 726	R2.1	The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act. Notifications must be made by telephoning the Environment Line service on 131 555.	Non-Compliant (for one incident in 2009) Otherwise, Compliant 2008 and 2010 Recommendation: It is recommended that all incidents with the potential for on-site or off-site environmental harm be reported to DECCW in the prescribed manner in accordance with Centennial Coal Guidance Notes ECMG 03 - Environmental Incident Reporting as has occurred.	The auditors sighted evidence to indicate that notification to the EPA (and other relevant authorities) was being implemented during the audit period.	Completed

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Environment Protection Licence 726	L2.1	For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	Non-Compliant (2009 and 2010) Recommendation: It is recommended that Clarence Colliery requires its third-party water discharge sample collection and analysis contractor (ALS) to provide full chain-of-custody documentation for all samples (including sample collection date/time and analysis date/time). ALS should also be requested to confirm and document in its analytical reports that all samples are analysed within laboratory holding times.	Chain of Custody information was sighted during the audit period, Confirmation that samples are analysed within the laboratory holding times was not being provided by ALS and this is still considered relevant.	Ongoing Refer Appendix A
Environment Protection Licence 726	L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.	Non-Compliant (2010)	Assessed as non-compliant in previous IEA based on exceedances of pH limits. No recommendations made.	Noted
Bore License Certificate - 10BL165053 (Dewatering bore - Reviewed Licence, still to be approved).	5	The licensee shall not allow any discharge of mine waters into any creek, river, watercourse or aquifer without written support from NSW Office of Water.	Non Compliant Recommendation: Implement effective systems to ensure no further pipeline ruptures occur from the two extraction boreholes.	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.
Bore License Certificate - 10BL165053 (Dewatering bore - Reviewed Licence, still to be approved).	6	The licensee shall develop a Monitoring Program within six months of the commencement of discharges into the Wollongambe River to the satisfaction of NSW Office of Water to evaluate potential long term impacts, including those on Farmers Creek. The Monitoring Program shall record at minimum:	Indeterminate	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Bore License Certificate - 10BL165053 (Dewatering bore - Reviewed Licence, still to be approved).	6	<p>(a) The quantity and quality of groundwater extracted from the bores prior to treatment for discharge;</p> <p>(b) The quantity of groundwater extracted shall be recorded by a method approved by NSW Office of Water; and</p> <p>(c) The quality of the pre-treated groundwater shall be analysed every 3 months for a suite of analytes including electrical conductivity, total dissolved solids, pH, alkalinity, total suspended solids, dissolved oxygen %, temperature, iron and manganese.</p> <p>Tests should be conducted by a laboratory with appropriate quality standard certification.</p>	<p>Non Compliant</p> <p>Recommendation:</p> <p>Obtain approval from the NOW for the method used to monitor quantities of water pumped.</p>	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.
Consolidated Coal Lease 705	7	<p><u>Reports</u></p> <p>The lease holder must provide an exploration report within a period of twenty - eight days after each anniversary of the date this lease has effect or at such other date as the Director - General may stipulate of each year. The report must be to the satisfaction of the Director - General and contain the following</p> <p>(a) Full particulars, including results, interpretation and conclusions, of all exploration conducted during the twelve months period;</p> <p>(b) Details of expenditure incurred in conducting that exploration;</p> <p>(c) A summary of all geological findings acquired through mining or development evaluation activities;</p> <p>(d) Particulars of exploration proposed to be conducted in the next twelve months period; and</p> <p>(e) All plans, maps, sections and other data necessary to satisfactorily interpret the report.</p>	<p>Non Compliant</p> <p>Recommendation</p> <p>It is recommended that Exploration reports are prepared and issued that provide:</p> <p>(a) Full particulars, including results, interpretation and conclusions, of all exploration conducted during the twelve months period</p> <p>(b) Details of expenditure</p> <p>(c) A summary of all geological findings</p> <p>(d) Particulars of exploration proposed</p> <p>(e) All plans, maps, sections and other data</p>	<p>Examples of Annual Exploration Reports for Clarence Colliery Mining Titles were sighted and reviewed to indicate required information was provided.</p> <p>Examples of evidence that the reports were submitted, reviewed and accepted by DRE were sighted.</p>	Completed

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Consolidated Coal Lease 705	13	<p><u>Rehabilitation</u></p> <p>(a) Land disturbed must be rehabilitated to a stable and permanent form suitable for a subsequent land use acceptable to the Director-General and in accordance with the Mining operations plan so that:</p> <ul style="list-style-type: none"> There is no adverse environmental effect outside the disturbed area and that the land is properly drained and protected from soil erosion; The state of the land is compatible with the surrounding land and land use requirements; The landforms, soils, hydrology and flora require no greater maintenance than that in the surrounding land; In cases where revegetation is required and native vegetation has been removed or damaged, the original species must be re-established with close reference to the flora survey included in the Mining operations plan. If the original vegetation was not native, any re-established vegetation must be appropriate to the area and at an acceptable density; and The land does not pose a threat to public safety. <p>(b) Any topsoil that is removed must be stored and maintained in a manner acceptable to the Director General.</p>	<p>Indeterminate</p> <p>Recommendations:</p> <p>It is recommended that solutions are identified to address the lack of stored topsoil for REA III and that if material from REA IV is to be used, scheduling arrangements can be made to directly used material from REA IV to REA III rehabilitation.</p> <p>It is recommended that ecological surveys are conducted routinely on existing rehabilitation with close reference to the original MOP or subsequently approved surveys. Such surveys should assess all aspects of rehabilitation practices, and comment on effective methods to address issues identified.</p>	<p>A Rehabilitation Monitoring Program was established in 2012.</p> <p>The monitoring reports provided include recommendations relating to rehabilitation.</p> <p>Rehabilitation is discussed in Appendix A.</p>	Ongoing Refer Appendix A
Consolidated Coal Lease 705	13	Rehabilitation cont'd	It is recommended that third parties independently review rehabilitation plans generated by Clarence and actions conducted with a view to best practice rehabilitation as appropriate given the sensitivity around the bushland location of the mine.		Ongoing Refer to Appendix A

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Consolidated Coal Lease 705	14	The lease holder must comply with any direction given by the Director- General regarding the stabilisation and revegetation at any mine residues tailings or overburden dumps situated on the lease area.	Indeterminate. Recommendation: Finalise the Rehabilitation Plan as specific to the Reject Emplacement Areas and submit to relevant agencies for approval as required of the AEMR site inspection conducted in 2010.	Rehabilitation Plan as specific to the REA has not been finalised and submitted to relevant agencies.	Ongoing Refer to Appendix A
Consolidated Coal Lease 705	1	<u>Notice to Landholders</u> Within a period of three months from the date of grant/renewal of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted/renewed and whether the lease includes the surface. An adequate plan and description of the lease area must accompany the notice. If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted/renewed; state whether the lease includes the surface and must contain an adequate plan and description of the lease area.	Indeterminate	Assessed in previous IEA. No new evidence available	Closed out

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Mining Lease 1583 (Application No's 208 and 209)	1	<p><u>Notice to Landholders</u></p> <p>Within a period of three months from the date of grant of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted and whether the lease includes the surface, An adequate plan and description of the lease area must accompany the notice.</p> <p>If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted state whether the lease includes the surface and must contain an adequate plan and description of the lease area.</p>	Indeterminate	Assessed in previous IEA. No new evidence	Closed out
Mining Lease 1583 (Application No's 208 and 209)	7	<p><u>Reports</u></p> <p>The lease holder must provide an exploration report, within a period of twenty-eight days after each anniversary of the date this lease has effect or at such other date as the Director-General may stipulate, of each year. The report must be to the satisfaction of the Director-General and contain the following</p> <p>(a) Full particulars, including results, interpretation and conclusions, of all exploration conducted during the twelve months period;</p> <p>(b) Details of expenditure incurred in conducting that exploration;</p> <p>(c) A summary of all geological findings acquired through mining or development evaluation activities;</p> <p>(d) Particulars of exploration proposed to be conducted in the next twelve months period; and</p> <p>(e) All plans, maps, sections and other data necessary to satisfactorily interpret the report.</p>	<p>Non-Compliant</p> <p>Recommendation</p> <p>It is recommended that Clarence ensure Exploration reports are developed to meet the requirements of the Condition. (As per CCL705).</p>	<p>Examples of Annual Exploration Reports for Clarence Colliery Mining Titles were sighted and reviewed to indicate required information was provided.</p> <p>Examples of evidence that the reports were submitted, reviewed and accepted by DRE were sighted.</p>	Completed

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Subsidence Management Plan Eastern Area	19	<u>Miscellaneous Conditions</u> Roads (all types) - The Leaseholder shall implement a management plan to ensure the safety of road users and the serviceability of any roads and/or 4WD trails within the application area. This plan shall be implemented to the satisfaction of the owners/operators of the infrastructure.	Non-Compliant Recommendation Prepare and implement a management plan to ensure the safety of road users and the serviceability of any roads and/or 4WD trails within the application area.	Mining under this SMP has been completed, and the SMP expired on 1 June 2013, hence this specific condition is now not applicable.	Closed Out
Subsidence Management Plan Eastern Area	21	Land Management - The Leaseholder shall implement a management plan to ensure adequate management of any potential impacts associated with surface cracking, erosion, soil slumping and land degradation caused by mine subsidence and/or activities associated with monitoring or other management activities in the application area. The management plan shall be developed and implemented to the satisfaction of the NSW State Forests.	Non-Compliant Recommendation Develop and Implement a management plan to ensure adequate management of any potential impacts associated with surface cracking, erosion, soil slumping and land degradation caused by mine subsidence and/or activities associated with monitoring or other management activities in the application area. The management plan shall be developed and implemented to the satisfaction of the NSW State Forests.	Mining under this SMP has been completed, and the SMP expired on 1 June 2013, hence this specific condition is now not applicable.	Closed Out

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Surface Licence Main Dam - 10SL039344	1	The holder of the license shall within three months of being called upon by the Department of Natural Resources to do so, install to the satisfaction of the department in respect of location from type and construction and appliance or appliances for the measurement of the quantity of water diverted or taken by means of the licensed work such appliance or appliances to consist of either a measuring weir or weirs with automatic recorder or meter or meters of the dethridge type or such other class of meter or means of measurement as may be approved by the department and shall continuously maintain such appliance or appliances in good working order and condition and shall after the installation of such appliance or appliances record the measurements of all water diverted or taken by means of the licensed work and supply particulars of such measurements to the department at such intervals as shall be directed by the department. Wherever called upon to do so a test certificate furnished either by manufacturer concerned or by some person of authority duly qualified shall be supplied by the holder of the licence as to the accuracy of the appliance or appliances installed.	Non Compliant General Recommendation: It is recommended that Clarence re-negotiate the terms of the Main Dam Water licence with NOW such that the requirements are clearly understood and that the licence conditions relate to current operations. 1. Non Compliant as no monitoring data for period 5-8-09 to 23-8-09, and 29-8-09 to 6-8-09. Recommendation: Implement as planned the monitoring device for LD2. Ensure all monitoring as required by NOW and the licence in place after finalising the licence with them as per above Recommendation.	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.
Surface Licence Main Dam - 10SL039344	2	The Licensee shall not allow any tail water drainage to discharge into or onto: <ul style="list-style-type: none"> Any adjoining public or crown road; Any other persons land; Any crown land; Any river creek or watercourse; Any ground water aquifer; and Any native vegetation as described under the native vegetation conservation act 1997. Wetlands of environmental significance	Non-Compliant Recommendation: Implement effective systems to ensure no further pipeline ruptures occur from the two extraction boreholes.	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.

Title	Condition No.	Summary of Condition/Requirement	2011 IEA Compliance Status/ Recommendations	2016 Update – Assessment as part of 2016 IEA	Completion Status in 2016
Surface Licence Main Dam - 10SL039344	11	The licensee shall provide pipe or pipe syphons or other approved means for passing flows through the storage of the dam referred to in condition 10. The pipe or pipe syphons shall be of sufficient capacity and of such nature as to allow its operation in accordance with condition 12.	Non-Compliant Recommendation: Install pipe or pipe syphon as required. It is understood that site have ordered the pipe system and once it arrives it will be installed.	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.
Surface Licence Main Dam - 10SL039344	12	When a natural flow is entering the storage of the dam referred to in condition 11 the pipe siphons referred to in condition 12 shall be so operated as to maintain a flow in the Wollangambe River downstream of the dam equivalent to the natural flow entering the storage for the time being or a quantity of 0.05 megalitres per day. Whichever is the lesser.	Non-Compliant Recommendation: Install pipe or pipe syphon as required. It is understood that site have ordered the pipe system and once it arrives it will be installed. Clarence should install flow monitoring at the main dam to quantify flows from this point to the Wollangambe River and be able to demonstrate compliance with this requirement.	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.
Surface Licence Main Dam - 10SL039344	14	The level of the crest of the bay wash of the dam shown as No2 on the plan referred to in condition 16 shall be fixed at not higher than 2.25 metres below the level of a bench mark established on a gum tree to the left bank of the watercourse near the work and particulars of which are retained in the office of the Department of Natural Resources.	Indeterminate	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.
Surface Licence Main Dam - 10SL039344	15	The level of the crests of the by washes of the dams shown as No 3 and 5 on the plan referred to in condition 15 shall be fixed at not higher than 8.0 meters above the bed of the unnamed watercourses at the sites of these works.	Indeterminate	Not assessed during the 2016 audit.	Not assessed during the 2016 audit.



Appendix C

DPE Approval of Independent Audit Team



Planning & Environment

Planning Services Resource Assessments

Contact: Colin Phillips
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Email: colin.phillips@planning.nsw.gov.au

Mr Brian Nicholls
Mine Manager
Clarence Colliery
PO Box 92
Lithgow NSW 2790

Attention: Mr Martin Howe

Dear Mr Nicholls

**Clarence Colliery (DA 504-00)
Independent Environmental Audit
Endorsement of Consultants**

I refer to your letter dated 3 November 2015 advising that Centennial wishes to appoint Michael Woolley as the lead auditor, and Nick Ballard and Helen Onus as members of the audit team, to undertake the independent environmental audit required by Condition 6 of Schedule 5 of the abovementioned consent.

Please be advised that the Department has considered the qualifications and experience of these consultants and that the Secretary endorses their appointment to undertake the independent environmental audit.

The Department is also satisfied that this audit team is suitably qualified to carry out the detailed audit of the subsidence, surface water and groundwater impacts of the development required by Condition 7 of Schedule 5 of the consent.

Should you have any questions about this letter, please contact Colin Phillips on 9228 6483.

Yours sincerely

Howard Reed
Director Resource Assessments
as the Secretary's nominee